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California's Computer Magazine

AUG. 15 - SEPT. 12

MicroTimes™

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Life And Times Of A Compatible Manufacturer: Corona Data Systems

Product Reviews, Buyer's Guide

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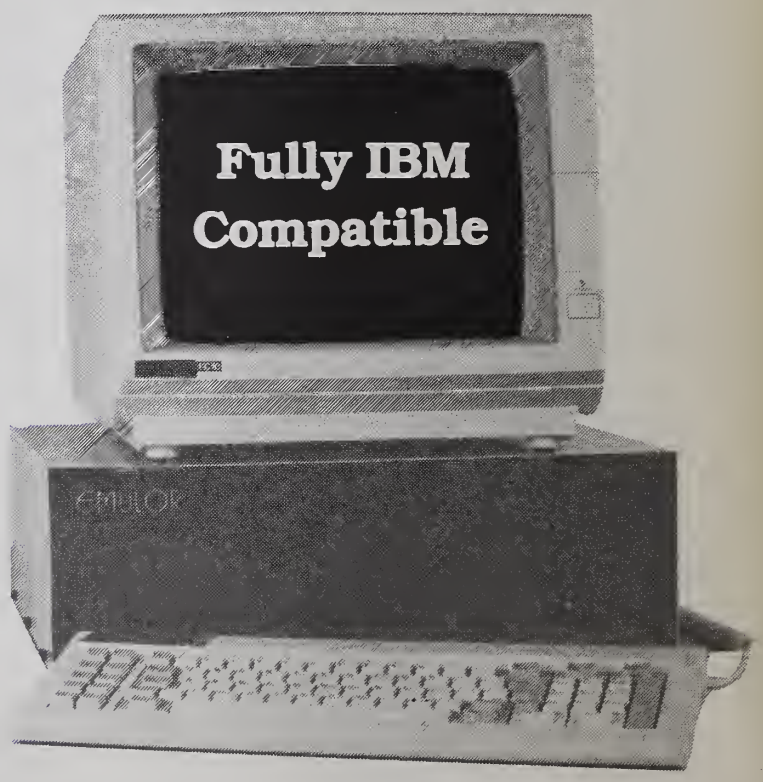

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MICROTIMES

Cover and contents photo: Pat Johnson Studios/Billy Douglas

President Kevin Jenkins of Hercules Computer Technologies, seen here with one of his silent partners, explains the principles behind his company's success.

COVER STORY

26 Winning In IBM's World:

Hercules Computer Technology

By Mary Eisenhart

Hercules' graphics cards for IBM PCs and compatibles have become an industry standard. President and co-founder Kevin Jenkins explains that you *can* go up against Big Blue and come out a winner.

FEATURES

34 Improving On IBM's Standard? The Life And Times Of Corona Data Systems

By Jeff Spurrier

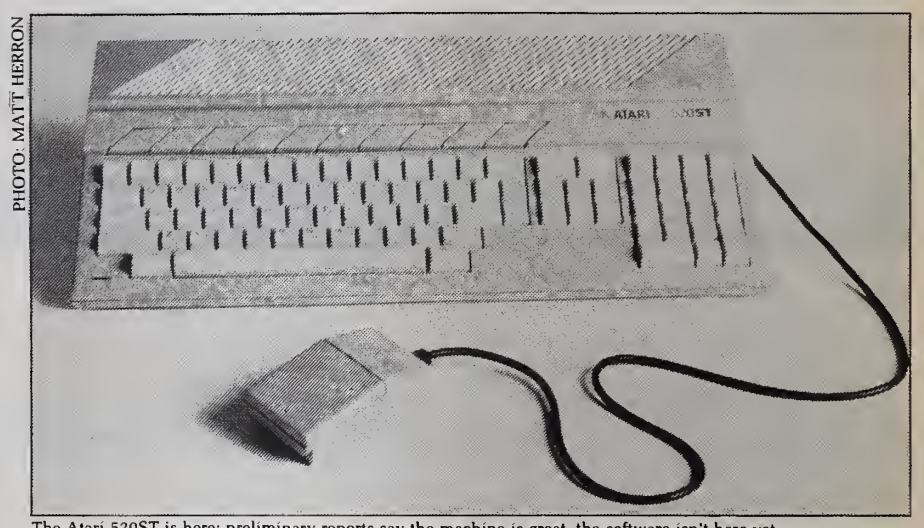
A manufacturer of "IBM Compatibles" explains the importance of breaking new ground while maintaining compatibility with the operating system IBM has established so successfully.

38 Preview Of Commodore's Amiga

By Matthew Leeds

Says Commodore-columnist Leeds, "Commodore has come up with a winner."

PHOTO: MATT HERRON



The Atari 520ST is here; preliminary reports say the machine is great, the software isn't here yet.

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By Mike Fulton

A report on the "Jackintosh," from a user who bought one of the first machines.

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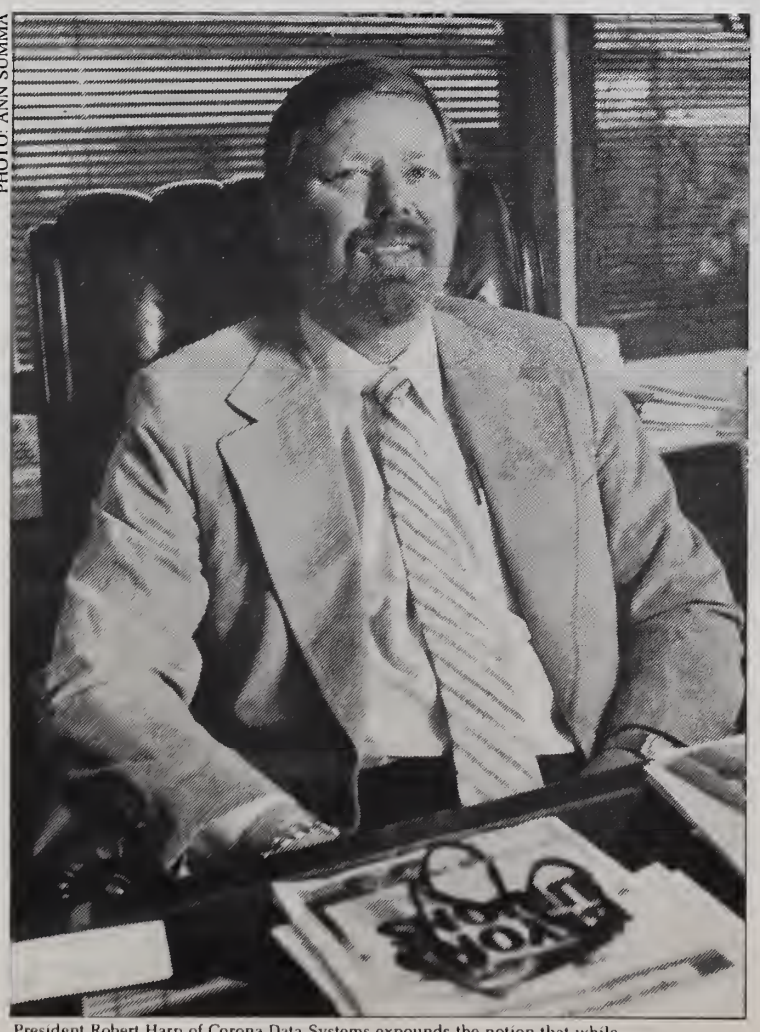
How to select a system for automating your office.

PHOTO: ANN SUMMA



President Robert Harp of Corona Data Systems expounds the notion that while MS-DOS capability is a good idea, cloning IBM hardware isn't. (See page 34)

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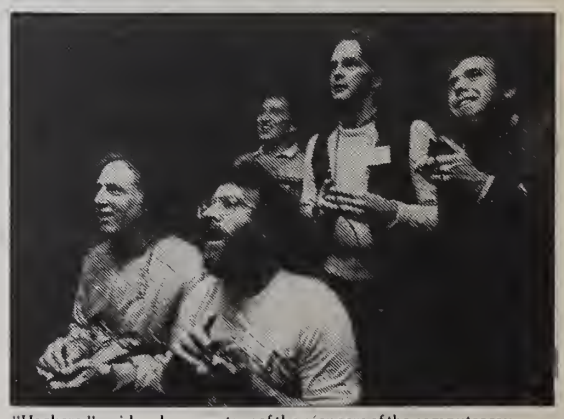

"Hackers," a video documentary of the pioneers of the computer revolution, is coming to the TV screen this month. (See page 22)

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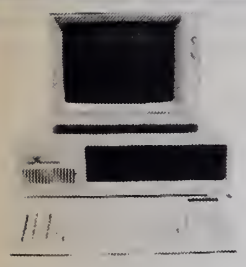

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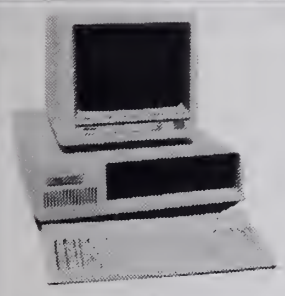

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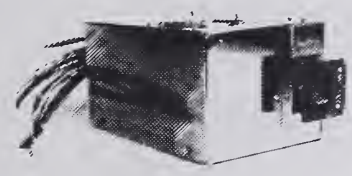

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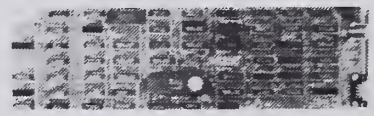

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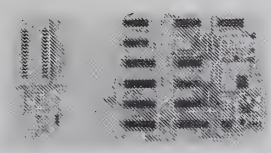

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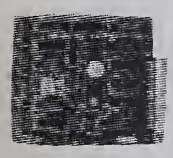

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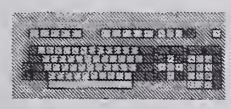

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LETTERS

More *dBase* Hints

I read with interest Bill Amatneek's article on *dBaseIII* and Mailmerge. I have been using *dBaseII* in a similar manner. It is possible to write the dBase .dbf file to another by following the command with 'DELIMITED.'

However, the resulting Mailmerge .df has so many delimiters that it is difficult to read. I therefore use the following program:

```
* MERGDAT2.PRG
  (VERSION 1.2, R. A.)
  Set-up: Auto wrap is OFF
  (value = 0)

set talk off
set echo off
use b:mrg80:4.dbf
set alternate to b.cus80q4.dbm
[for correspondence to
  customers who brought cars
  in the 4th  quarter of 1980]
set alternate on
do while .not. eof
  ? record,trim(title),trim
  (firstname),trim(lastname),
  trim(sal), trim(address),
  trim(city),state,statezip,year,
  trim(model), trim(model2),
  delivery
   skip
enddo
```

The "record" is the *dBase* record number and also serves as the Mailmerge number. The .dbm file is read by Mailmerge. The autowrap does not have to be off, but it is easier to scan very long strings in *dBase* files on the monitor.

These files have been used in a follow-up mailing program for a Volkswagen salesman, who agreed to purchase the computer in exchange for the mailing service.

The original .dbf. file has been edited with quotation marks, only if appropriate to Mailmerge, not around every field which makes it very confusing (especially if you have to wear tri-focals). The resulting Mailmerge .df might end up looking something like this:

```
df record,title, firstname,
lastname,salutation,address1,
address2, year,model,
deliverydate,FILE1,FILE2
```

FILE1, etc. will pick up other (.fil,etc) files on the diskette which may be applicable to that customer or a promotional program such as the introduction of a new car model.

Because the letters (and envelopes, not labels) are so highly individualized, the mailing program has been very effective, both in returning the customer to the store and in obtaining referrals. The style in which the letters are written, of course, matters a lot.

I purchased this package two years ago: DEC Rainbow, 128K (minimum necessary at the time for *dBaseII*), *WordStar*, *MailMerge*, *Multiplan* and Oasis' *Word Plus*. I had no previous experience with personal computers but I bought the *dBaseII* and resolved to learn how to use it because I wanted a whole system that worked when I brought it home.

I am supported by a $30/month contract by Digital, the best value of which is their 800-hot-line that operates 7-days a week.

In the above apparently simple program I had originally put "set alternate on" up at the top with the other "switches" — it looked neater. The program ran but information was written to the new file on the screen but not on the disk.

I phoned Digital and their *dBase* group worked on it for an hour or so, then told me they would call me back. It was late on a Sunday afternoon. But they did call back with the answer, and the mailing went out that night.

I can understand why Digital has backed out of the personal computer business. It probably does not pay to support neophytes like me. The contract also covers the hardware but in almost 24 months of hard use nothing has ever broken down.

R. Aney
Los Angeles

Atari Users Get Serious

With the advent of the new Atari 520ST (512K, disk drive computer and color monitor for under $1000), it would be nice to be taken seriously.

Please include articles about the new Atari and Commodore. I just bought the Atari and it is dazzling — I feel like I bought a real winner.

If not articles, at least show some respect for the product I bought — it seems like Apple is so cavalier.

A Reader

Normally we don't print anonymous letters, but this seems to be a popular sentiment. See articles in this issue — Ed.

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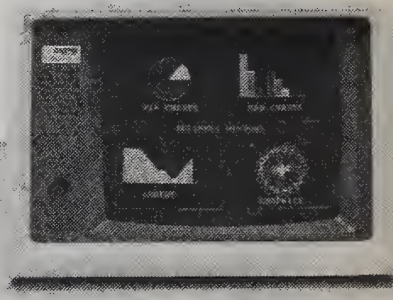

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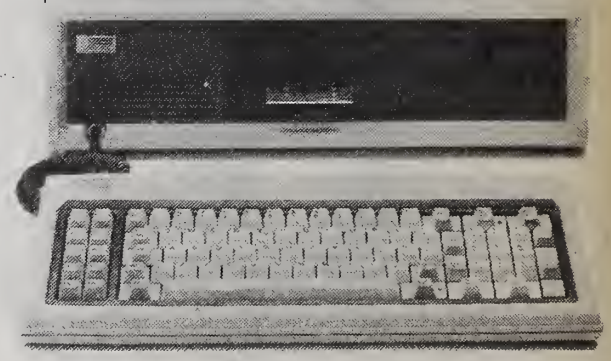

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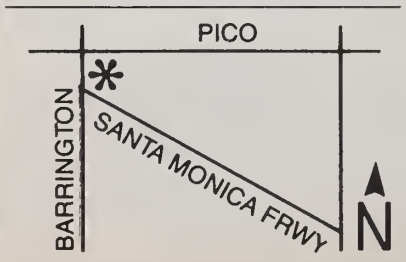

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CAD systems on computers, for instance, monopolize the computer with no other purpose than to provide a CAD environment. Today the opportunity exists for a firm to use the same machine for CAD that it is using for Lotus. You may find the architect working on the CAD during the day and the bookkeeper using it during the night.

If it's chosen carefully, the first computer need not be *just* that. If it proves itself, it may be the first of many. If, on the other hand, it is misused, it could be the last for a long time.

However, there is good reason not to combine some tasks. If the secretary is always using the computer for word processing, the engineer will not find available time on the machine. The potential saving in secretarial time may not result in as large a productivity improvement overall as having the engineer constantly online.

Today's time managers must prioritize what projects become computerized and who gets a personal workstation. These choices are very difficult to justify until after the fact. Sometimes the combining of tasks seems as though it would help in the justification of a system. However, one must keep in mind that if it's chosen carefully, the first computer need not be just that. If it proves itself, it may be the first of many. If, on the other hand, it is misused, it could be the last for a long time.

The human mind functions fine on 20% usage. I have often heard people say that Albert Einstein used more than the normal 20%. What if he didn't? What if he was just very creative? Maybe he was able to focus and unfocus his mind when required; focus on the solution to a complex logical mathematical solution to an abstract problem. He may also have possessed the ability to look at the problems with a childlike open mind in a very unfocused manner. His greatest breakthroughs were made in his early years, as are those of most outstanding mathematicians. In later years he became unable to unfocus; he could no longer close out all the other functions of his mind, a common problem as most of us grow older.

When focused, he used his mind to capacity in one area, unburdened by other distractions, as a computer might be used as a CAD system alone, not attempting to do spreadsheets or word processing.

As the line between minis and micros blurs even more, the capacity for multiple functions will increase. There are so many microcomputers out there now that the quality of the software products is surpassing the software available for the larger machines.

Most of us perform multiple functions with our home computers. Letters are written using a word processor and calculations on the purchase of our new house are made with a spreadsheet. Games are also played using the same machine. What prevents this sharing of a resource from happening on many commercial systems? When one of the users monopolizes it so much that the others cannot use it, or when it is not available at convenient times for the users, contention is generated. This will cause the other users to avoid the use of the machine because it is not available when they need it, or because it will be taken from them when it is needed the most.

Another part of the problem that we users face is expecting too much out of each system. Word processor users who until recently used a typewriter will complain that the processor does not have a function that they think they critically need. The answer to this problem quite often is to learn to live within the limits of the program that you purchased. After all, the simplest of word processors is a great improvement over the typewriter. If you have become proficient with your system and can see an increase in productivity that could justify the cost of a new program, then buy it.

When assets are shared, or when the same asset is used for multiple purposes, then that asset may develop contention problems.

My grand conclusion is that using a computer as the mind is used is not bad, but design your system so that you will not be trying to do too much with the same machine. If your machine is used sporadically, then let it have many uses. If it is heavily used, allow it to have few uses and users.

AST And Apple

AST, which manufactures add-on boards for IBM computers, is currently in the process of forming a relationship with Apple. AST has long been a maker of boards for IBM; in fact, 10 weeks after the first IBM-PC hit the streets, the first AST board was ready. Companies like AST have made MS-DOS the industry standard. Unfortunately for IBM, Big Blue is having some trouble controlling the standard. Thanks to Compaq and other "compatible" manufacturers, the issue of compatibility revolves not around IBM but the standard which IBM created.

Steve Jobs may not have wanted this to happen to Apple Computer, but with his departure Apple appears to be ready to open Pandora's box and allow add-ons. AST has been negotiating with Apple and appears to have developed a relationship.

During this period of stagnation in the industry, AST has continued to show phenomenal growth. Its product line is one reason. Management is another. AST has signed contracts with Borland, developed products for IBM, and is on the springboard of developing for Apple. AST is now modernizing its production line for high productivity.

An Apple For The Student?

The Apple II line is still a good buy. It's hard to believe, but like the DC-3 which has been flying for 50 years now, the Apple II is a durable classic. A lot of computers and computer companies have come and gone while the Big Apple II has continued to hold its own.

In every category, the Apple II has kept up. It has memory expansion. New software is being released for it daily. Probably the largest cross section of software products exist for it. For hardware, it is the most expandable of all computers available today. The Apple can be configured to almost any need in the home or small business. It is also perfect for the student, and plays as many games as any other computer on the market.

It is certainly not the computer I would recommend for everyone, but credit must be given where due to a computer that has become a tradition.

Ashton-Tate To Acquire *Multimate*

Ashton-Tate is purchasing *Multimate* in order to gain a strong position in the word processor market. *Multimate*'s new LAN version should be out within the next month. □

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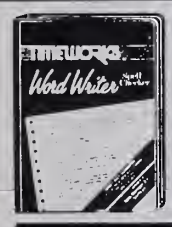

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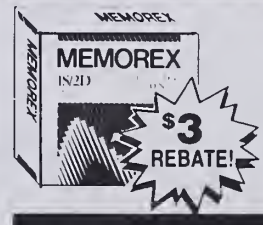

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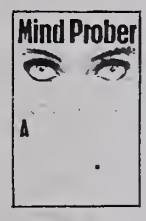

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***Megaworks* may be the most useful add-on you can buy for *Appleworks*.**

UTILITIES

Megaworks

Published by: *Megahaus*
For: *Apple IIe/c*
Suggested retail: *$125.00*
Reviewed by: *John D. Gresham*

When *Appleworks* appeared last year, it quickly became apparent that it was one of those "special" software products that periodically appear in our industry. Not only is it a bestseller, its sales actually drive the sales of other products like computers and add-ons. *Visicalc* did it for the Apple II+ and *Lotus 1-2-3* did it for the IBM PC/XT. Now *Appleworks* is doing it for the Apple IIe/c family of computers. How well, you might ask. Well, it just recently knocked *Lotus 1-2-3* off the top of the software bestseller lists.

Yet, good as *Appleworks* is, it is a package with a number of holes. No graphics, mail merge, or spell checking, none of a number of other highly useful utilities, are included with the basic *Appleworks* package. This has resulted in a number of software packages designed to dovetail with the basic *Appleworks* package. The most successful of these has been *Megaworks* from Megahaus. The reason for this is simple. In one reasonably priced ($125.00) package, Megahaus has managed to include both mail merge and spell checking utilities that do more than just work with *Appleworks*. They in fact become part of your *Appleworks* operating system. All of the keystroke commands, file structures, and system cues from *Appleworks* are used in *Megaworks*, so the process of learning and using it is extremely easy.

The mail merge function of *Megaworks* is quite simple to use. All that is involved is the creation of a mail list and a form letter master. The form letter master has insert points designated for the mail list information, and the data flow from the data base across the *Appleworks* clipboard for merging and printing of the form letter(s). The spelling checker is even simpler, with the utility having a 50,000-word capacity dictionary that automatically checks a document, and then keys the user to the words that require attention. If the checker runs into a new word that doesn't currently reside in the 40,000-word basic dictionary, the word can be added with a single keystroke to the 10,000-word supplemental dictionary. While this spell checker does not prompt the user with possible correct spellings of words, it does minimize the workload by only displaying a word within a document to be corrected once.

All-in-all, *Megaworks* is probably the most useful add-on that you can currently purchase for *Appleworks*. Reasonably priced, well packaged, and easily learned, it's the perfect companion software. And with other new *Appleworks*-related products coming out soon from Megahaus (*Reportworks* is due around Labor Day), *Megaworks* should form the basis for an entire series of *Appleworks*-based utilities software. I highly recommend it.

TELECOMMUNICATIONS

SAM: The Smart Answering Machine

Manufactured by: *Dialectron, Inc.*
For: *IBM PC, 192k or more*
Suggested retail: *$295.00*
Reviewed by: *Warren Sirota*

"Hello. You have reached Brian's answering machine. Please wait for the beep and leave a message. Then my machine will call back your machine, and the two machines can get together for lunch sometime." So goes the message on my friend Brian's phone line, and it used to seem merely whimsical. That is, until I met SAM.

SAM is the Smart Answering Machine from Dialectron, Inc. It consists of a board that plugs into your PC or compatible and connects to your phone line, and software that runs the board. In its simplest usage, SAM is a disk-based answering machine, allowing callers to leave digitized messages on your computer which you can then listen to in any order, saving some for later re-listening and discarding others. The maximum length of each message depends upon the memory in your machine, starting at about 90 seconds for a 256K computer.

SAM is much more than an answering machine, however. Probably its most useful feature is the ability to leave personalized messages for (theoretically) up to 999 callers. If you were a consultant or salesperson who spent a lot of time out of the office, it could be very handy to have a couple of personalized messages on the machine telling your spouse and business partners where to reach you. The public at large would only hear your generalized greeting message, but people who you've given access codes can press the "*" key on a touch-tone phone, followed by their access code, and receive a message recorded just for them.

Another feature of SAM is its distribution list. If you have information which you needed distributed to a number of people, then you can use SAM to call the entire list, deliver a message, take a response, and retry any calls which didn't get through, all while you're out on the putting green enjoying the sun. One SAM user that I spoke to uses this feature to arrange meetings, where a number of phone calls are involved.

Complex interactions with people who answer the phone can be programmed. SAM can call up individuals, ask them to press a number if they would like information about a particular product, and then play various messages depending upon which number they pressed. A report would be issued indicating which choices were made for each phone number.

SAM performs most of its functions reliably and easily, although it is dependent upon the exact timing of the IBM PC and so will only run on certain compatibles (the developer says that versions for other MS-DOS machines will be released in the near future). Installation is easy, and the menu-structure of the program is clear. Programming a complex interaction which allows the listener to make a lot of choices is not explained well in the manual, but it isn't too hard to do.

In addition, SAM is completely programmable from a remote location. When you dial in the special operator's access code, a voice prompts you for the mysterious "Function?" and "Command?" You have to learn the meaning of a few mnemonic function codes to use this, but you can, for example, call up and change the personalized message

TELECOMMUNICATIONS

that you had left for your spouse when you discover that you won't be home for dinner, after all.

I have some reservations about SAM. Firstly, be advised that a typical digitized voice message uses from 30K–150K of disk storage. This means that a hard disk system with lots of free space is necessary if you expect to get more than 10 or so calls before deleting any. Also, the SAM software is a foreground task, so you cannot use your computer while SAM is running. For someone like me, who needs to screen calls while working on the computer, this means that I'd better not throw away my PhoneMate.

SAM might be an appropriate product for a firm that was involved in telemarketing, or for a professional who is out of the office a lot. It has advantages over an answering service, in that individuals can leave a complex message and confidentiality can be maintained. An individual considering such an application should also be aware, however, that there are companies which rent "voice mailboxes" which duplicate many of SAM's functions, and which connect to a national network and allow people from throughout the country to call you at low toll rates.

And then there's that nasty recurrent dream, in which SAM calls Brian's answering machine, and the two of them beep at each other in touch-tone ecstasy as they make a luncheon appointment.

UTILITIES

Fast Load

Published by: *EPYX, Inc.*
Suggested retail: *$29 – $39, depending on dealer*
Reviewed by: *Ed Shurtleff*

Let's face it. The 1541 disk drive isn't exactly the fastest thing in the world for running your C-64. I've got some programs that suggest going out for a smoke or a nice cuppa coffee, just to make you feel better while heavy files are being loaded. And some games seem to take forever to start, or to get to a new screen right in the middle of the exciting part. Something had to be done to break the bottleneck.

The inexpensive choice seemed to be a software routine, while the expensive one was, and is, dual drives through the parallel port. I tried a couple of software programs without much luck. Load time of the "fast" software plus the desired program itself doesn't really save enough to make this approach effective. Combining with a LOAD and RUN boot routine for a long program does help some, if you know how to do this and your commercial software will allow it. I don't think the dual drive approach is cost-effective for business applications that don't involve a lot of data transfer. Also, many heavily protected games won't work on anything else but the old 1541.

The people at EPYX sensed the same need and came up with a solution to help the user and, not so incidentally, help them sell their game software. *Fast Load* is a cartridge that plugs into the cartridge slot of the C-64 and allows you to load, save and copy disk files three to five times faster than normal. Games don't have boring lags and *The Consultant* database has now become a positive joy to use. It doesn't require any hardware or wiring modifications — you can unplug it if you want to, or use its internal DISABLE feature without unplugging. You will probably have to unplug only to run some special purpose utilities such as "disk-doctors" or copy programs that talk directly to the drive controller, but this is to be expected. *Fast Load* costs about the same as a software game, and seems to be a well-accepted solution. EPYX has sold over 200,000 copies to date, and they plan to build it into all their new Commodore software — like the new *Summer Games*.

I bought mine for the fast loading capability only. I was pleasantly surprised to find a complete DOS wedge, plus a disk utility, plus a file utility, PLUS a machine language monitor all in the package! All of these work well. You can copy individual files, just the contents of the RAM, or copy the entire disk with a lot of options. You can edit a disk, or you can "lock" a file to prevent its deletion and unlock it later if desired.

The only problem I noted was that saves of sequential files wouldn't happen. Other kinds of files saved OK, and no other operations seemed to be affected. I called the customer service people at EPYX, who informed me that I had a very early version of the cartridge and gave me three fixes for the problem. I pass these on, just in case you have one of the early versions. New cartridges don't have the problem.

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UTILITIES

disk drive, leave it turned off except when you are ready to print. This isn't such a bad idea for non-*Fast Load* operations either. It saves power, wear and tear on the printer, helps paper alignment, etc. In the majority of cases, this is all that's needed to make an old *Fast Load* cartridge work properly.

Second, if the first fix doesn't work for you, reset your disk drive before SAVEing by turning it off, then back on. This will clear DOS memory and allow the save.

Third, if both fixes don't work, return the package to the store where you bought it, or direct to EPYX for replacement with the latest version (which doesn't have any glitches at all that I can find).

Updated Versions Of CP/M-80 For The Epson QX-10

Published by: *Digital Research Inc.*
Suggested retail: *under $25.00*
Reviewed by: *John McMullin*

Like a vintage wine, the venerable CP/M-80 operating system seems to improve with age. Most Epson QX-10 owners received the CP/M-80 Version 2.0 with their computer. This version was used to run the Microsoft MBASIC as well as the Peachtree software that was sold "bundled" with the QX-10. It would also run hundreds of other CP/M resident commands plus a few utilities including the very handy PIP transient command for copying files. Also on the version 2.0 disk we had a combination control utility program called CP+. The CP+ program was a bit redundant to CP/M, but some users preferred it for file management and printer control. All in all the 2.0 version was a mature operating system, reasonably free of bugs, that did its job well.

It all got better in February 1984 when Epson released an improved 2.2B version especially tailored to the QX-10. Gone was the redundant, menu driven CP+, and in its place were some new resident commands and utilities that were easier and faster to use. Even the popular PIP program was supplemented, but not replaced by, a more powerful utility called INDEXER. INDEXER provides rapid copying of files or groups of files and several other file management chores. I routinely put INDEXER on all of my data disks. Another new utility is SUBMIT, which will perform a series of preprogrammed chores including copying groups of files. A third important addition is a SETUP program somewhat more extensive than we have had before.

Perhaps the most impressive addition is the RAM disk facility. CP/M has always been restricted to the use of only 64K of RAM, letting the balance of the QX-10's 256K go to waste. Now, with the new versions, we can put most of that extra RAM to good use. With the RAM disk facility activated via the SETUP menu, your QX-10 thinks it has three disk drives: A, B, and M. Disk M, the RAM disk, holds only 112K, and it loses that if the power goes off or if you punch RESET. However, the RAM disk is the fastest disk in town if you want to run a program that needs frequent access to the disk for data or instructions. To use the RAM disk just put your program disk in the B drive, PIP or INDEXER your files or program to the M disk, and see how fast it runs! You can have the program output sent to the B disk for safety. Remember the RAM disk is not a

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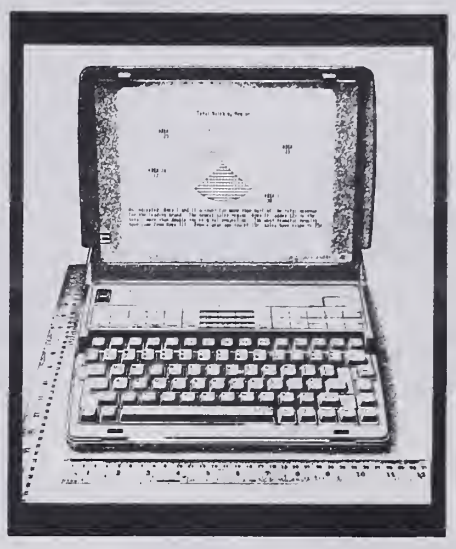

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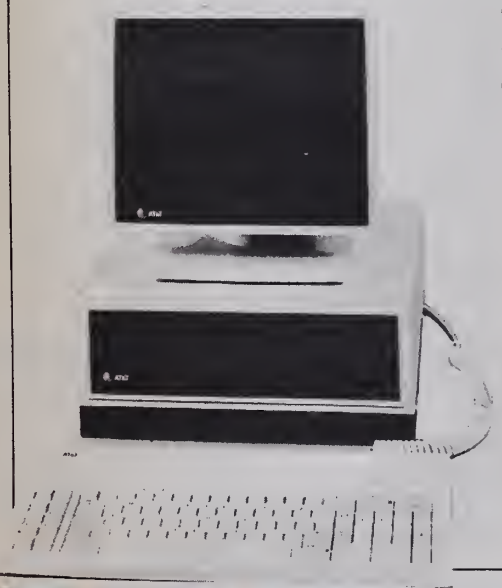

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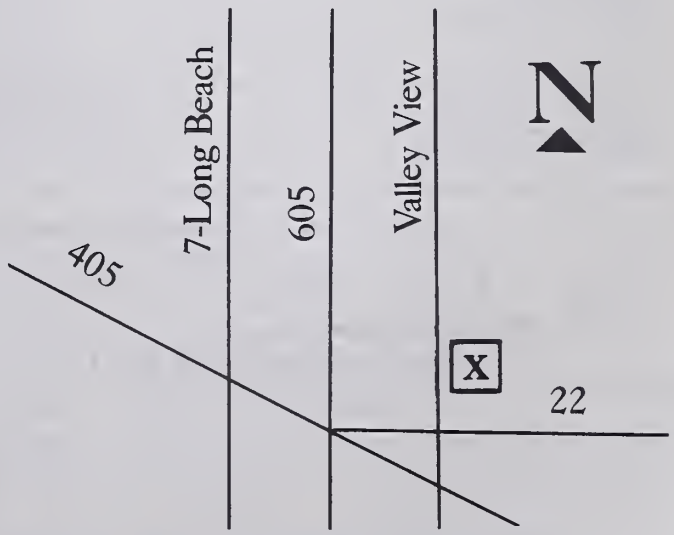

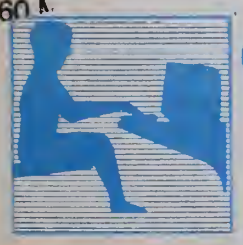

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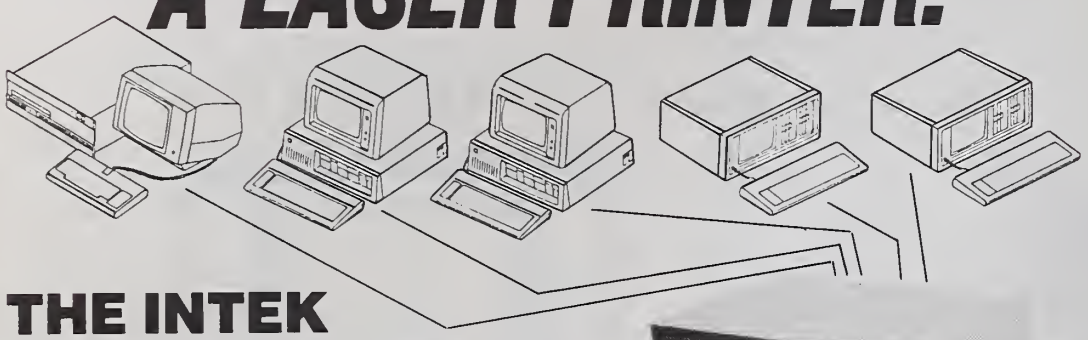

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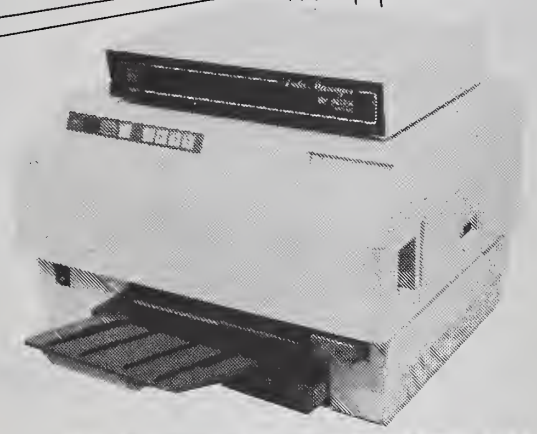

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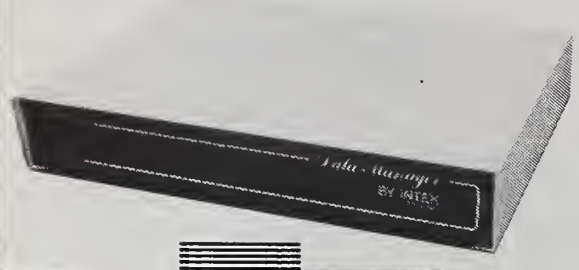

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safe place to accumulate a lot of data without a backup copy. The RAM disk facility alone is worth the very modest price of either the 2.2B or 2.25 version updates.

A second update, version 2.25, was released in August 1984. This update seems to have all the features of the 2.2B versions, although they are arranged a bit differently in the manual. The only major additions are utilities for hard disk and modem controls. We have not tried either of these.

Do you need either of the updated versions? If you use CP/M at all, a definite yes. The 2.25 version is cheaper so buy it if you have neither. If you have neither a modem nor a hard disk, there is little reason to update from the 2.2B to the 2.25 version.

PROJECT MANAGEMENT

Timeline, Version 2.0

Manufactured by: *Breakthrough Software*
For: *IBM PC, XT, AT, PC 3270 and compatibles*
Suggested retail: *$495.00*
Reviewed by: *Bennett Falk*

Timeline is project management software. If you need to get something completed on time, within budget, and without working everyone involved in the project to death, you should certainly take a look at it.

Using *Timeline* is easy. Begin by setting up a work calendar for the project which determines which hours of which days are available for work. Once the work week is defined, enter resources and costs for the project. *Timeline* allows tremendous flexibility in resource/cost definition: a resource may be an individual, a work group, or a piece of equipment. "Costs" can be fixed, variable, or unit, and for purposes of budgeting may be prorated over the life of a project or imposed at either the start or end of a project.

Once the calendar and resources have been established, the tasks that make up the project can be scheduled. Here again there is remarkable versatility. Tasks can have fixed date, ASAP, or ALAP scheduling. Other projects for which there are *Timeline* schedules may be entered as tasks. Dependencies between tasks may be indicated with either joins or partial joins. Once the tasks have been entered, *Timeline* can be used to resolve scheduling conflicts and to perform "resource leveling."

After a project is underway and modifications need to be made to the schedule, *Timeline* will reschedule a project's remaining components taking performance to date into account.

To do all this, *Timeline* smashes some common preconceptions about what kinds of software there are in the world. The most common display *Timeline* users see is a "Gant" chart, which looks like a time-oriented spreadsheet. (You can, of course, get other graphic views of your information, PERT charts and resource histograms, for example.) Unlike spreadsheets, however, data entry for *Timeline* is form driven, as it might be in a good database program. In addition, the reporting capability of *Timeline* produces reports like those a database would produce. Unlike generic database programs, however, *Timeline* is time and resource oriented. It is a unique instrument for managers.

Timeline is copiously documented, offering both on-line help and a spiral bound manual. As might be expected, documentation for project management software is a tricky matter. The world

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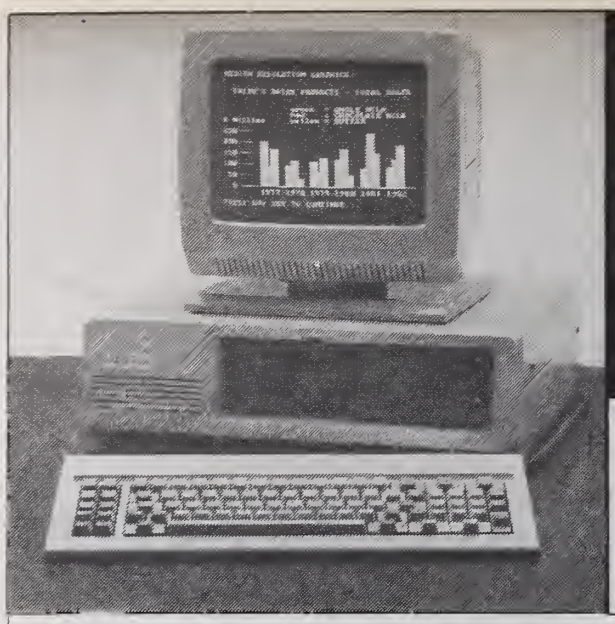

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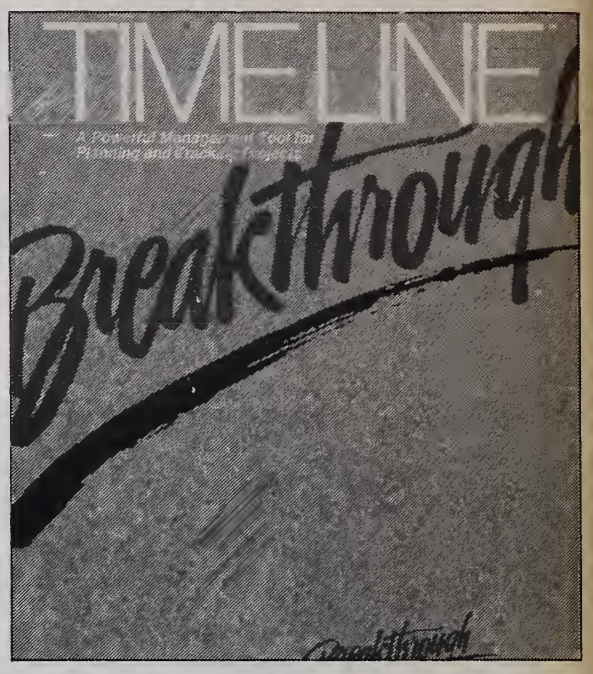

***Timeline Version 2.0* is a significant expansion and refinement of an already good project management package.**

is full of people who manage projects, but most managers are self-trained, with a knowledge of scientific management tools that is chancy at best. *Timeline* is a first introduction to Gant/PERT/histogram styles of management for many of us, and we will learn the management concepts and tools as we learn the software.

Timeline's documentation takes this into account. It is well-written (barring the occasional split infinitive), easy to understand, complete, and indexed. But it is difficult to extract just the command set for *Timeline* from the manual's discussion of what the commands do, how they ought to be used, and what the theoretical entities behind the software are.

The manual has some irksome features. The worst of these is the placement of comments, hints, and warnings in the margins, outside the manual text; the marginal notes are easy to miss, and it is difficult to know when to stop reading the text and check the notes in the margin. The screen images, which feature white print on a red background, can be hard to read. For the 2.0 release of *Timeline*, many of the screen images are reproduced with red lettering on a white background, which is much easier to read. Incidentally, for Version 2.0 the manual has been re-organized and re-edited, and its usefulness has improved dramatically.

Timeline does so much and is so novel, it is difficult to identify problems in its design. One potential problem is that it does not handle repetitions of tasks well. Task names must be unique, and if you need to do the same thing several times in the course of a project, it will have to be scheduled under different names. One other potential problem area is that there is no easy way for the outcome of one task to become a resource for another as it must in many manufacturing operations.

It is not easy to get excited about new versions of existing software, but *Timeline* is an exception. The new release, Version 2.0, is a significant expansion and refinement of a package that already did its job well. New users will find it easier to get started with the menu front end and redesigned data entry forms of the new version. Resource management and project costing have become features in their own right rather than support for *Timeline*'s basic scheduling function.

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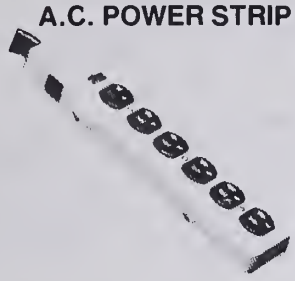

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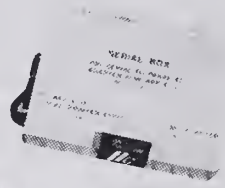

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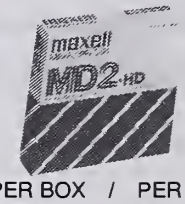

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Another version of the GRiD has been chosen by the super-secret National Security Agency as the first portable computer approved for transmission of classified data. The machine incorporates sophisticated encryption built into ROM, but it will be commercially available to Government agencies and contractors. — *Michael Markowitz*

Compute Of Ill Repute

All My Children, ABC's top-rated daytime soap opera recently featured a cameo appearance by the Apple IIc. In the story, the madam running a high-class prostitution ring used the friendly little computer to keep business records, including a list of her most valuable clients. One of the girls, with dreams of starting her own business, steals the floppy disk with the all-important list of names. When last observed, the disk had been slipped secretly into her boyfriend's sport coat pocket, and was on its way to the dry cleaner.

Will a critical sector be wiped out by lint? Will the theft of data be discovered? How much did Sculley pay the producers to feature the cute but slow-selling machine on America's most popular soap opera? For the answers to these and other questions, don't depend on this column.

The preceding note is provided as a service to readers who are unable to watch daytime TV due to other commitments. — *Michael Markowitz*

PHOTO: MATT HERRON

"Hackers," a half-hour documentary exploring the personalities and ethos of the computer revolution's pioneers, will be shown on KQED (Channel 9) in the Bay Area on Tuesday, August 27 at 7 pm, Wednesday, September 4 at 7:30 pm, and Wednesday, September 25 at 8:30 pm. Featuring footage shot at last year's Hackers' Conference, "Hackers" was produced by San Francisco's Fabrice Florin and incorporates interviews with computer heroes such as Steve Wozniak, John Draper (Cap'n Crunch), Lee Felsenstein, Bill Budge and Bill Atkinson. Check it out.

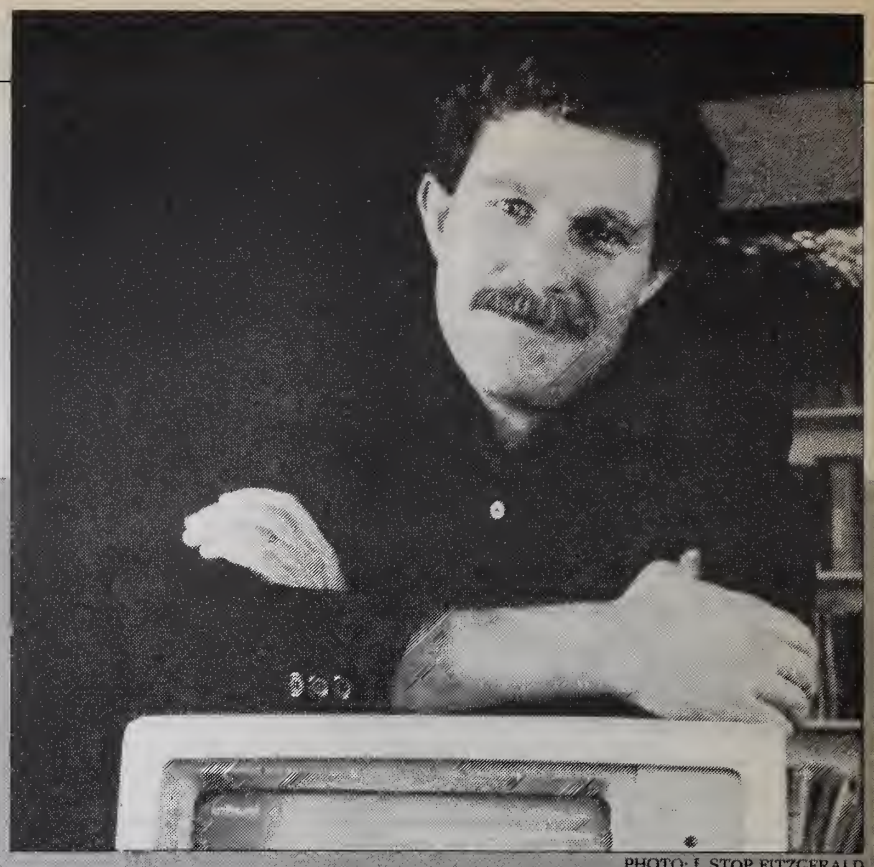

PHOTO: I. STOP FITZGERALD

ANDREW FLUEGELMAN

"I think this is just the next adventure for a lot of us to get into...I know the intellectual excitement the [computer] has caused for me. It's really been a rejuvenation, and anything that gets you that pumped up has got to be something that you can use in a good way.

"I also think that people who do get excited about computers and involved in all this are almost uniformly intelligent, interesting people. I never have been as socially involved, as interconnected with as many different kinds of people, as when I started getting involved with computers...I think thot the easier it is for people to express themselves, and to share their views with others, that's got to be a good democratic force.

"It's great to go along for 40 years and suddenly find your life still changing, and new things happening. It mokes you look forward to what's going to happen when you're 60, what's going to happen when you're 80, because I really believe there are still changes to come."

— *Andrew Fluegelman, February 1985*

When we interviewed Andrew Fluegelman earlier this year (Issue #9), he was embarking on the next phase of a career spent helping people communicate and get their jobs done better. He had co-founded the user-oriented *PC-World* and *Macworld* with David Bunnell to, he said, "support people who bought into this system." He was about to undertake further projects in software publishing, expanding upon the continuing success of his telecommunications program *PC-Talk*, written in the early days of the IBM PC. He'd been writing a book at the time with a co-author on the East Coast, discovered that there was no software in existence that would allow them to swap text files over the telephone lines, and decided to write the software himself.

Having written *PC-Talk*, and being all too familiar with the pitfalls of publishing, he devised the Freeware marketing concept to distribute it, based on the notion that the software, while copyrighted, should be freely circulated and copied and that satisfied users should send him $35. Not only was this novel approach financially successful, to Fluegelman's surprise, but it also resulted in an avalanche of suggestions from users for potential improvements in the software. He christened this feedback "Freeback" and duly incorporated many of the suggestions into the current version, *PC-Talk III*. He also noted that he was regularly accosted at conventions by people waving checks for $35.

This whole picture is hard to reconcile with the currently reported facts: that Fluegelman's car was found with a note near the Golden Gate Bridge on July 6, that his family conducted memorial services on July 14 and placed a death notice in the *New York Times* July 15. The *San Francisco Examiner* and *Chronicle* reported that the police department in Tiburon, where Fluegelman lived and worked, is treating his disappearance as a missing-person case; contacted at presstime, the department declined to discuss the situation.

The truth may never emerge. What's evident is that the computer community has lost one of its most positive forces. Our deepest sympathies to Mr. Fluegelman's family and friends.

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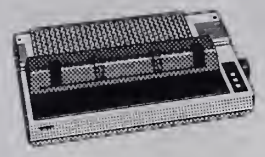

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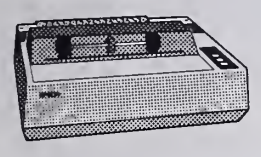

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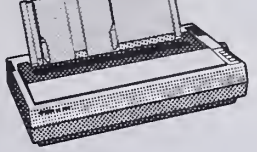

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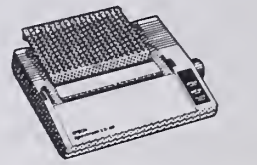

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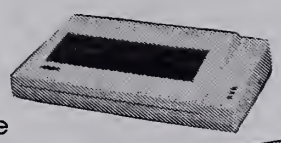

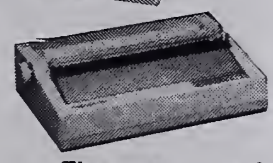

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PHOTO: ANN SUMMA

Computer Cafe Welcomes New Addition

Congratulations to Ellen and Michael Walker of L.A.'s Famous Computer Cafe talk show on the arrival of their new baby Zoe. She's being encouraged in her first broadcasting venture by her parents and their Cafe co-host Andy Velcoff (r).

Corrections

Great were the editorial wailings and gnashings of teeth in the MicroTimes office during the last month, inasmuch as our last issue seemed to have more than its fair share of errors, typos, and oversights. Herewith we attempt to set the record straight.

In our cover story on Macintosh upgrades, there was a discussion of the possibility that unscrupulous dealers might make representations to their customers that they were getting a factory-authorized Apple upgrade when in fact a third-party board was being installed. Due to a particularly unfortunate editorial lapse, a sentence referring to SuperMac Technologies of Mountain View was juxtaposed with this discussion, leading some readers to draw the erroneous conclusion that SuperMac engaged in such practices.

We did not foresee this possible inference and never intended that it should take place. In fact, SuperMac, which does indeed manufacture third-party 512K boards and sell them to retailers and dealers, packages and labels its boards in a highly distinctive manner impossible to confuse with Apple's. Further, SuperMac includes a mail-in warranty card which is given to the customer upon installation of the board; the company warrants materials and workmanship on the entire board for an entire year, as contrasted to Apple's 90 days; SuperMac also will repair or replace defective SuperMac ICs free of charge, and repair or replace free of charge any part of the Macintosh that fails as a result of defects in the SuperMac ICs, for the lifetime of the computer. This warranty is among the most comprehensive in the industry.

We apologize to Mr. Steve Edelman of SuperMac and to his valued customers and dealers for allowing this misunderstanding to arise.

In the portion of Retail/Service News that dealt with JDR Microdevices, a reference was made to "a complete line of oscilloscopes, ranging in size from a battery-powered handheld model to a heavy-duty 35 mHz unit." Gene Sakalay of JDR points out that the sentence should refer to "a complete line of electronic test equipment," that there's no such thing as a battery-powered handheld oscilloscope, and that anyway it should say "35 MHz."

In Buyer's Guide, the telephone number for Southworth Music Systems, which makes a MIDI-based music package for the Macintosh, is listed incorrectly. The real number is (617) 497-7522.

And last but not least, the voice number for The WELL (Whole Earth 'Lectronic Link), was also incorrect. If you want to talk to a human being about getting on The WELL, call (415) 332-4335. The modem number, (415) 332-6106, was correct.

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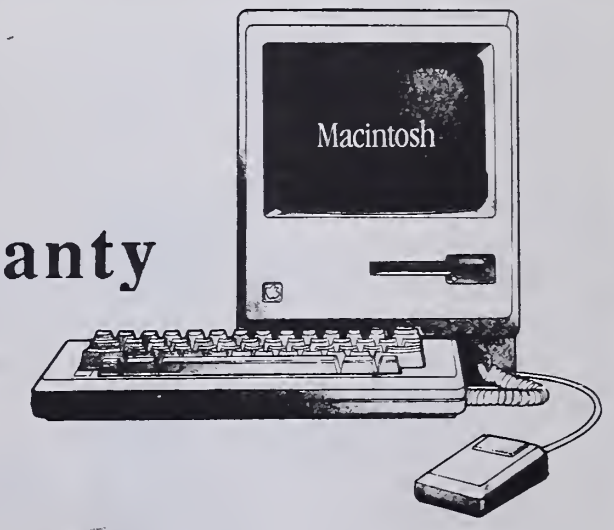

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Winning In IBM's World—

Hercules Computer Technology

By Mary Eisenhart
Photos: Pat Johnson Studios

"MAX!" The distress cry echoes down the hallway of the nicely-appointed offices of Hercules Computer Technology in Berkeley. An adolescent dog (a Staffordshire Bull Terrier, we're later informed), having made a break for it while on his morning constitutional, dances triumphantly around the writer/photographer delegation emerging from the stairs.

"He's *supposed* to be obedience trained," laughs his pursuer, scooping up the errant Max and ushering us into the office, where Max's cohort Pinkie is curled decorously at the receptionist's feet.

We're here to interview Max and Pinkie's proprietor, Kevin Jenkins, the 29-year-old president and co-founder of Hercules. Started three years ago by Jenkins and his partner Van Suwannukul, Hercules manufactures two products: the flagship of the line, the monochrome Hercules Graphic Card, and its companion, the Hercules Color Card. Both products are geared toward a mass market of IBM PC users, and they're expected to generate $60 million in sales this year. The cards outsell their IBM equivalents and are generally considered the industry standard.

Jenkins, however, didn't start out his career as a computer entrepreneur. Five years ago he was publishing a San Francisco art-and-music magazine called *Boulevards*. While it never achieved blockbuster status commercially, *Boulevards* was critically acclaimed and artistically influential. And, as Jenkins explains, this experience proved invaluable in successfully charting a course for Hercules through the treacherous waters of IBM's market.

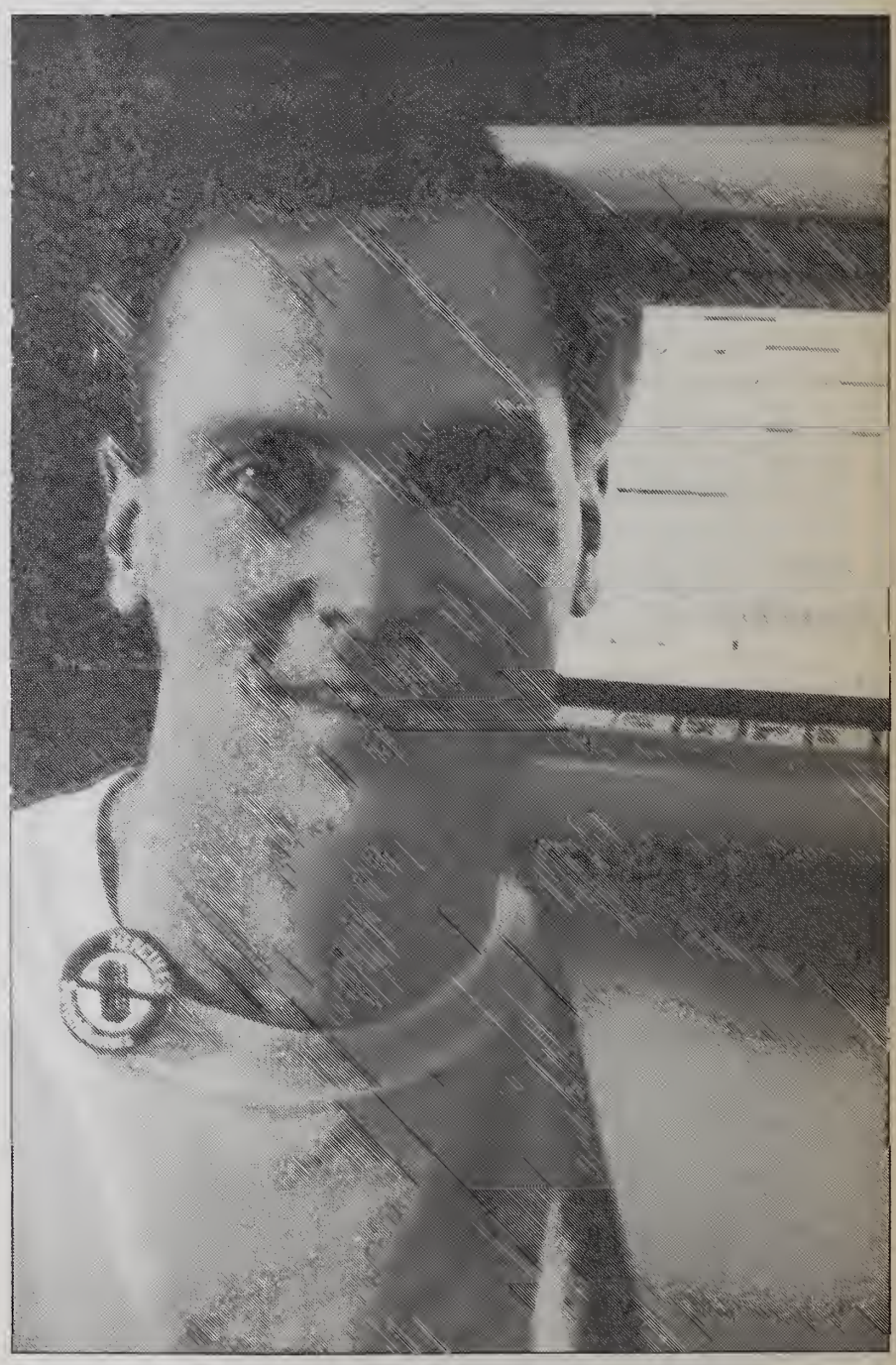
It's quite a switch from publishing a magazine to running Hercules Computer. What happened?

I decided I didn't like being poor. I have an accounting degree from Berkeley, and I got it because I thought that with the training of a CPA I'd be better equipped to be successful in business. I always wanted to run my own business and be independent and all that sort of thing.

So I just decided to start one, and the first thing that occurred to me was to start a magazine. I made a fatal flaw in assuming that if I put out a decent product people would like it and support me in my endeavor financially. And that wasn't the case — *Boulevards* was really aimed at a very small market without much buying power.

What market was that?

I guess graphic artists and punk



"The myth was promulgated in the early days of the IBM PC that nobody could really sell against IBM. Hercules is living proof that you can *sell against IBM."*
— Kevin Jenkins, *President*
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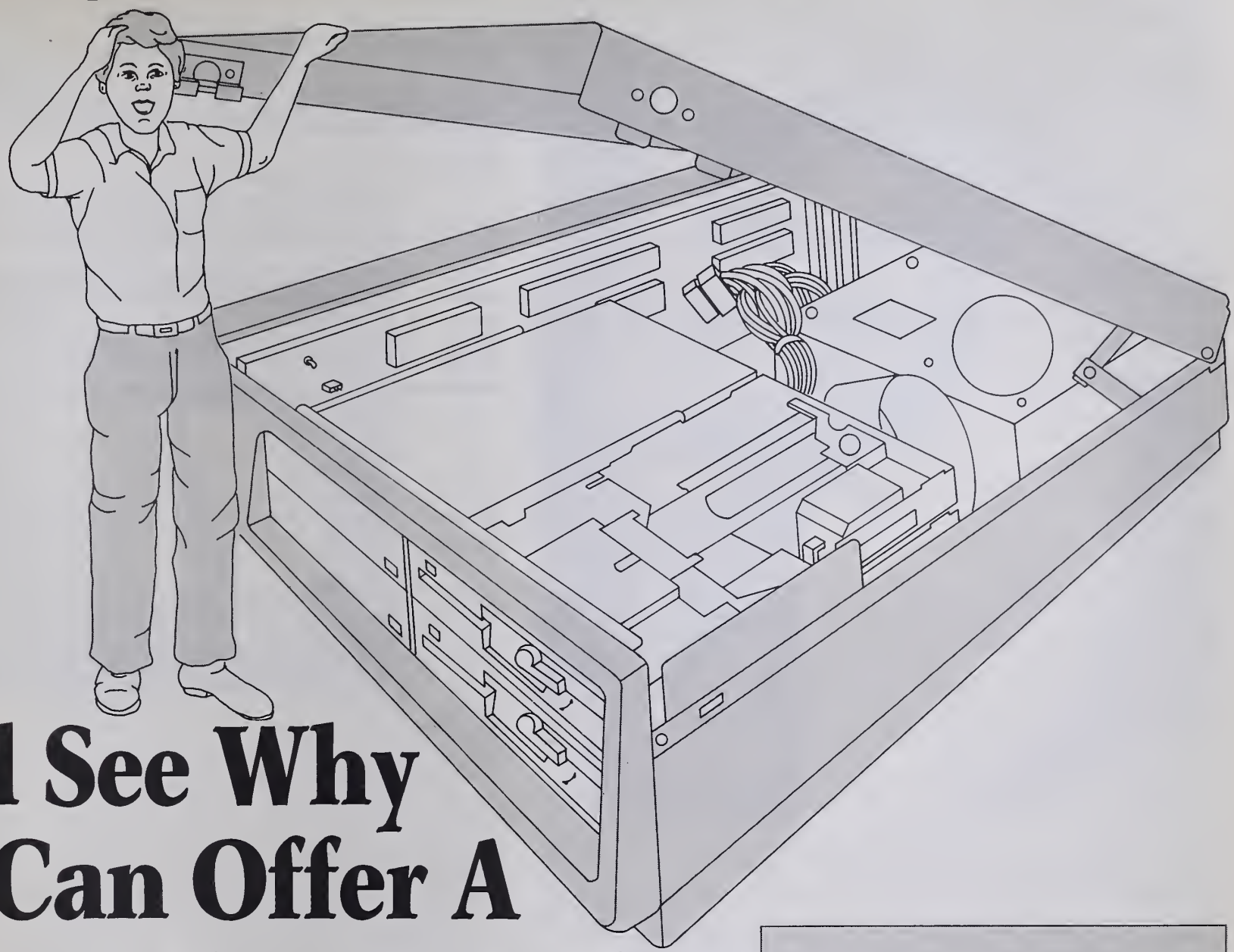

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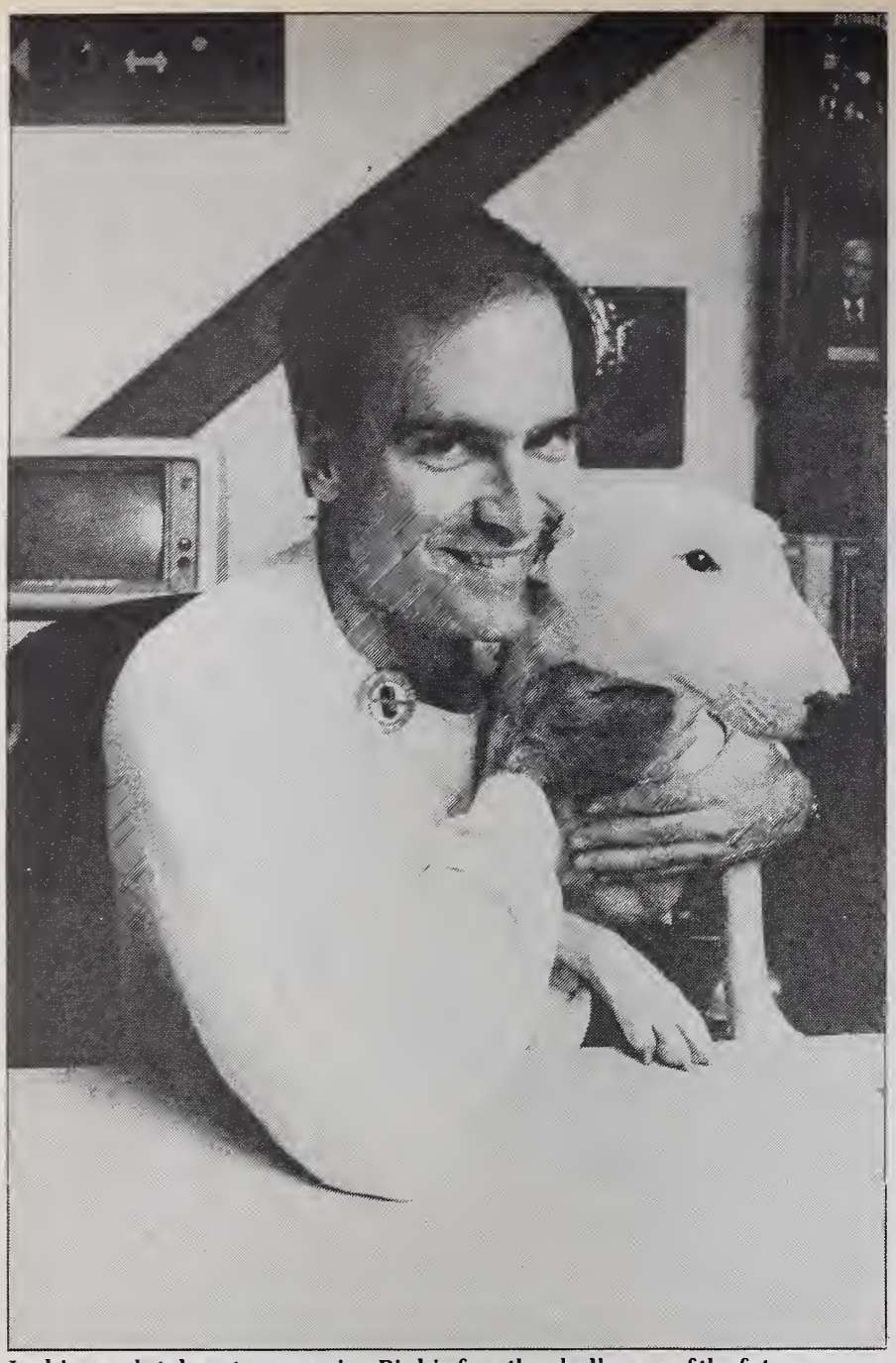

Jenkins and stalwart companion Pinkie face the challenges of the future resolutely: "Our mandate is to make the best products that we can, knowing what we know."

"Advertising and dealer promotions and sales forces are really meaningless if your product isn't truly useful. What that means from a practical point of view is that small companies like ours must link with products that join together."

rock musicians! [Laughs] Of San Francisco! Must've been about 5000 people in the target market, which was about the circulation of *Boulevards*. But it was successful in some ways — it really promoted a graphic art style which survived till now, widely copied and widely imitated.

And I thought for me it was a tremendous experience in how to run a business. But after that, September of '81, I realized that I'd been poor for too long, and so I set about to start another business in an area where I could make some money.

There were a lot of companies that had been successful in the Apple II area, making add-on boards for the various functions, video and memory and stuff like that. The Apple II board-level market at that time was a little old, but the IBM PC was being talked about and was announced in October of '81, with the same kind of open bus architecture that the Apple II had. So at that point I knew I wanted to start a company manufacturing PC boards for the IBM.

Had you worked with computers when you were at Boulevards?

No, I hadn't. I started a very intense self-education process. I built a little kit, read a lot about computers, and talked to anybody I could that knew anything about it. I gained enough of a working knowledge to know what might succeed and what might fail.

But the luckiest thing for me, besides the fact that I happened to be available at the time the IBM PC was announced, was that through a friend I met my partner, Van Suwannukul, who was working on his Ph.D. in EE at Cal at the time.

He had bought an IBM PC, one of the first to be sold in the area, with the intention of writing a word processor so that he could write his thesis in Thai. You need a certain amount of resolution to resolve Thai characters, and the IBM color card, which was the graphics board that was offered at the time, did not have enough resolution.

So he realized immediately that there was a need for a higher-resolution graphics board, and IBM sold a monitor that was nicely suited for high-resolution monochrome graphics. So he had the product idea, and he's an absolutely brilliant designer. I brought along my paltry efforts at marketing and management.

And that's how we launched Hercules. It was just the two of us, same old story, two guys in a garage. He designed the board in a couple of weeks, and I did the wire wrap in a few days, and we plugged the board in and it worked.

The board came out in August of '82, the Hercules Monochrome Graphics Card. I finagled a deal with *PC* magazine, which was the only magazine servicing the IBM PC market. They paid me for some consulting with advertising space, which worked out great, because they gave me a lot of advertising, and that was the first marketing push for us.

The ads came out, and it was just phenomenal, the response we had. We started selling graphics cards direct to customers and dealers. Sales were fairly low — I guess we sold about 100–200 cards a month, which at the time was probably about $100,000 a year. Which was a lot by *Boulevards* standards, but small by the standards of the computer industry.

So we plugged away, learning some of the idiosyncrasies of the product and making some minor changes to improve it, like manuals and packaging and software.

Our big break came when we were able to convince Lotus to write a version of *1-2-3* specifically for the Hercules Graphics Card.

How does it differ from any other version?

It has a driver that's designed for the Hercules graphics mode, for our memory map and parameters. And when you configure *1-2-3*, you select the Hercules option, and the driver is automatically installed in the program. So it's a matter of writing the driver, which isn't a very difficult process, really just a couple days.

When the driver came out with the first revision of *1-2-3*, which was July of '83, the sales of the Hercules Graphics Card started to double. Within six months we went from selling 150 boards to selling about five or six thousand [per month].

Were you doing anything unusual to promote the product? Lots of people have good products and they're still starving in their garages.

Regis McKenna said that what a lot of people don't understand about selling computer products is that advertising and dealer promotions and sales forces are really meaningless if your product isn't truly useful. What that means from a practical point of view is that small companies like ours must link with products that join together. There's so many aspects of the computer industry that companies must function together. And one of those [areas of collaboration] is software support for a graphics device that we produce.

I dedicated most of my time and effort to getting software companies to write programs for the Hercules Graphics Card. That made the product much more useful to customers. That's really why they buy it.

Van designed a very clean, very reliable product at the right time, and we were able to make these key connections with the software vendors, and particularly Lotus, at the right time as well. Because of that, we are the only company that's been able to establish a graphics standard next to IBM's. The Hercules Graphics Card is a unique standard, the only one, other than IBM, that's had a significant amount of software support. According to some market surveys I've read recently, Hercules sells more graphics cards than anyone, including IBM. Between IBM and Hercules, we have between 80 and 90% of the graphics board market, and Hercules has a slightly larger share than IBM.

Do you attribute that to the high resolution?

It's the high resolution, but it's also the fact that the high resolution is useful. High resolution in itself is meaningless. You've got to have the software to utilize it, and that's what we were able to do. We had high resolution when maybe 100 people a month would buy the product. High resolution by itself is nothing, just as

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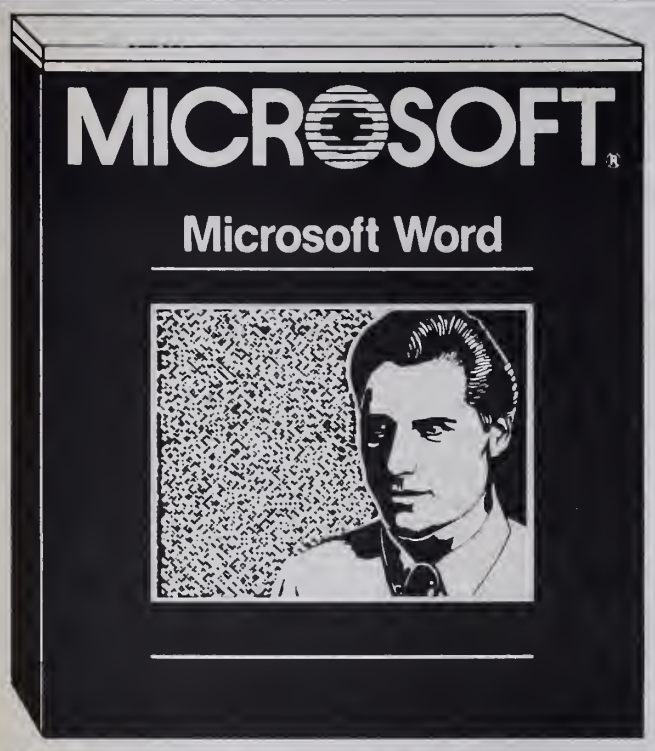

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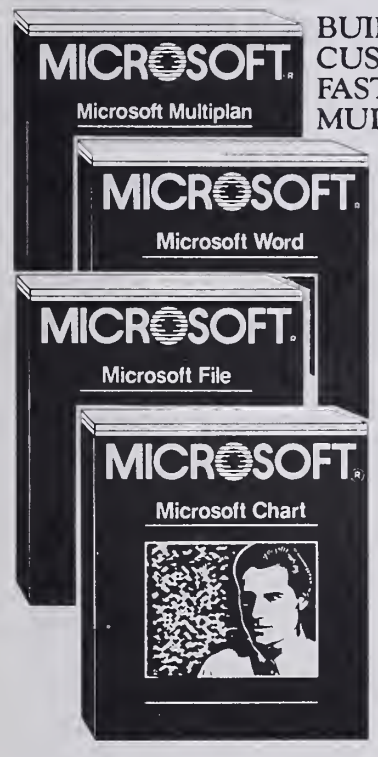

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"Resellers typically sell the products of many manufacturers, and if we design and market our product well, we can get the same resellers that are selling IBM equipment to sell *our* equipment. If we give them a reason to sell it, they *will* sell it."

512K of memory is nothing—it only facilitates the software. That's really the key thing. We made 1-2-3 a better program, in my opinion, and that's why the card is so popular among 1-2-3 users.

So when did you decide to make a color card?

That began when the gate-array technology had been developed far enough to allow us to achieve the reduction of cost and reduction in board size to allow us to make a product. We were not interested in making a straight copy of an IBM PC color card, and we felt we couldn't get the pricing, in components, to allow us to make the margins we'd want to.

When the gate array technology had advanced to the point where it was working reliably and could solve our problems, we designed the color card using two gate arrays, two custom ICs. Because we could fit so much circuitry, customized for our application, into the gate array, we were able to reduce the other components.

One of the fascinating things about the market we're in is that the PC's, when they became cheap enough, moved out of the national accounts division, which is what IBM used to sell all of its mainframes, and into retail stores and VARs. In other words, it went into a third-party reseller channel, rather than a direct-from-the-manufacturer channel. Resellers typically sell the products of many manufacturers, and if we design and market our product well, we can get the same resellers that are selling IBM equipment to sell our equipment. If we give them a reason to sell it, they *will* sell it. The myth was promulgated in the early days of the IBM PC that nobody could really sell against IBM. Hercules is living proof that you can sell against IBM, at least on the graphics board level.

The threat we always face is that IBM could decide, because they control the design of the CPU, to phase graphics products out altogether, and put the graphic circuitry on the motherboard, which would make it very difficult for Hercules, or any other board manufacturer, to compete.

The idea has surely occurred to IBM already . . .

IBM has faced antitrust litigation over the issue of bundling. Bundling software was the big issue. They would bundle software with their mainframes — in other words, if you want to buy the mainframe, you've got to buy the software. That was determined to be illegal.

Whether or not it ever becomes an antitrust issue, if IBM ever begins to bundle multifunction cards or modems or graphics boards, and Hayes or AST or Hercules decides to sue IBM for bundling — that's unknown. [Laughs] I hope it never happens, but it's possible that it co*uld* happen. It would be unfortunate for the consumer, who now has the opportunity to choose the best product for his or her application. That's the beauty of the Apple II and the IBM PC, and the major shortcoming of the Macintosh. It's probably the key reason that the Macintosh has not been accepted in business. It's not expandable, and because it isn't, I think many business people feel that they'll be locked into the limitation of the Macintosh hardware performance forever.

If you look back to the IBM PC, which is almost four years old now—when it first came out, it was very limited. It came with 64K and no hard disk, no color monitor, no letter quality printer—there were some extraordinary shortcomings. The third-party manufacturers, some of whom were created around products for the IBM PC, solved those user needs quickly, much faster than IBM did. IBM didn't come out with a color monitor for about a year and a half after the PC came out. Amdek was out with a color monitor within about six months. Tecmar came out with a memory board; because the PC could address 640K, they came out with a memory board, and AST and Quadram eventually dominated that market. If it weren't for Hayes there would be no modems for the IBM, because IBM has never sold a modem.

Are your cards usable in the PC compatibles?

They can be used in most of the compatibles these days. There was a time in the first round of PC-compatible machines when everybody was trying to improve on the IBM PC, and when they improved on it they found that they were introducing software incompatibilities into the system. The successful compatibles have been the ones that attempted to be most compatible with the IBM PC, both as far as hardware and software were concerned.

Do you see Hercules addressing product lines other than IBM—Apple, for instance?

We would have explored the possibility of making peripherals for the Macintosh had it been an open system, unquestionably. We might, for example, have produced a color graphics card.

We're not terribly prolific with our products. We're very cautious — we have two products after being in business for three years, and we'll do $60 million in sales this year. Our style is not to flood the market with lookalike products, our style is to build the best product that we can, to support and market it the best we can, and not make too many mistakes. Some companies have a shotgun approach — they load up with buckshot and blast away at the market and hope something hits.

It takes a tremendous effort—sales and marketing efforts, and writing software and that sort of thing — to make the product useful. It's not like selling a memory board where you put it out there and it just runs. It takes effort. But ultimately that effort is rewarded, because that product becomes established in its own right and there's not a lot of me-too products that can compete with it.

Do you expect to be making products for the Amiga and the Atari ST?

No. I doubt it very seriously. I think that the capabilities that those machines offer are unimportant to the business user. And I think that the success of the IBM PC is based on one key thing — whether IBM stumbled across this or whether they know it, and I think they know it — they sell a machine, not a sexy box. They sell a machine to solve business users' problems and work in a business environment. Apple doesn't do that, and I think that's their failing. They sell Yuppie philosophy of how you can maximize your personal identity, or some such nonsense.

My feeling about the Amiga and the Atari computer, from what I've read, is that they're offering capabilities that mean nothing to the business user. I don't pay people to sit around and draw pictures on computers, and I can't imagine any business executive or manager using a *MacPaint* [type of program] in an office environment to do anything of a business nature. Atari and Amiga are offering high performance color graphics, which have no utility in an office, and offering sound capabilities that probably have even *less* utility in an office.

So you've got two winning products. What are you going to do for an encore?

We have two graphics-related products coming out in the fall that will not impact the two products we have now. We feel that they're excellent designs and we'll put our resources behind those products. We're confident that there will be a very strong market for graphics products for the IBM PC and AT for the next two or three years.

There's no guarantee that any future machine from IBM will be successful. If people have any doubts about that, I'd point to the portable and the PCjr as examples of how IBM can miss the target. A PC II, whatever that might be, or whatever that might be called, may miss the target too. So before we get all bent out of shape from reading rumors in *PC Week* or publications like that, I'd rather follow our course and wait and see what IBM is doing before we get hysterical and make some dumb move.

Do you want to talk about the new products?

I am talking about one of them, which is a higher-performance, slightly higher-cost color graphics card that's slated to go against the EGA [Enhanced Graphics Adapter, from IBM]. Not to be an EGA clone, but to be a unique card with some unique features. That product will come out at the end of this year or the beginning of '86.

I think the EGA, which was IBM's answer to the criticism about its video technology, has been a real dud. It does not run any software either written for Hercules or the IBM color card. And the software vendors have been slow to support it. It's a rather expensive and clumsy and complicated product, despite the fact that it has the IBM logo on it. I think it's a poorly conceived product.

Do you feel particularly at risk from IBM's whims?

Absolutely. But that's been true from Day One, and I don't lose any sleep over it. I think Hercules' mandate should be: design the best graphics products that we can, given the market that we're after, which is the mass consumer market. We're not interested in specialized niches, or we would have been in them by now. We sell mass products and high volume, and we ship over 25,000 graphics boards per month.

Our mandate is to make the best products that we can, knowing what we know, and if IBM belches in Hercules' direction, we'll stand up to it. [Laughs] As best we can. □

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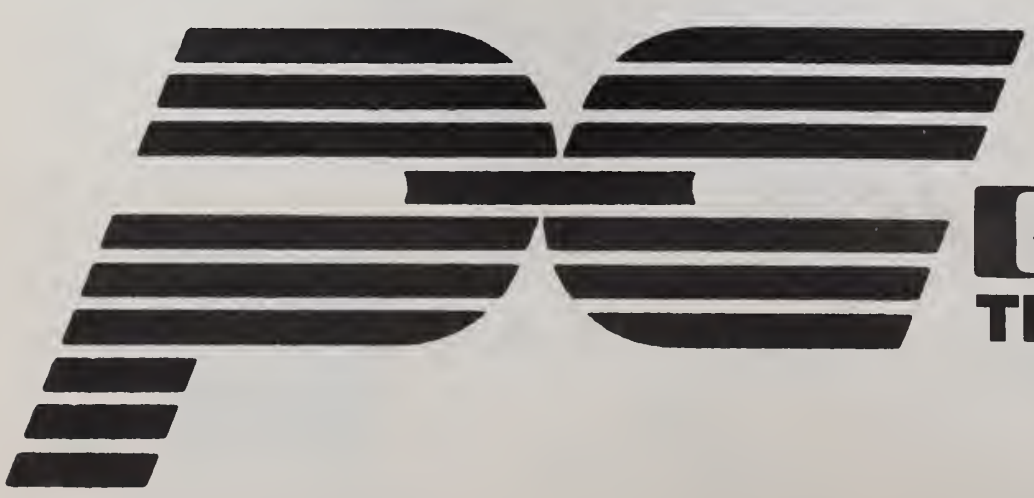

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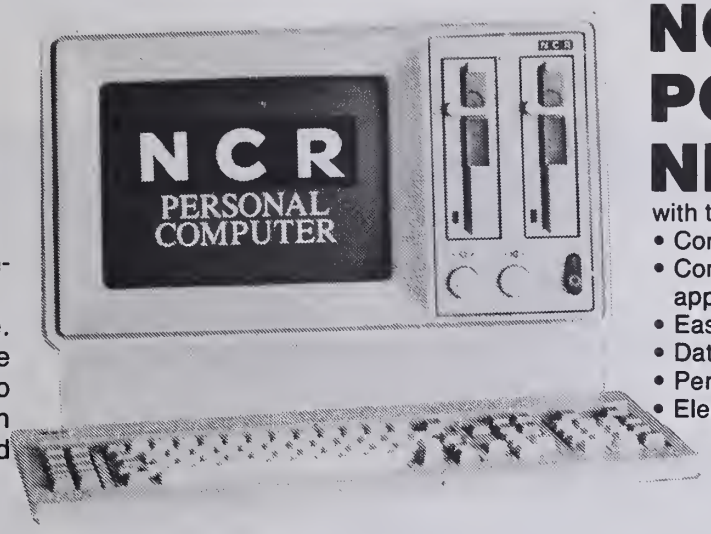

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Improving On The IBM Standard?

The Life And Times Of Corona Data Systems

By Jeff Spurrier

"The original idea three years ago was that the only way you could start a micro computer company and be successful was to take advantage of the software being developed for the IBM PC," says Dr. Robert Harp, founder of Corona Data Systems of Thousand Oaks.

That might sound like a great idea now, when IBM compatibility is the *de facto* standard of the PC world, but back in the dark ages of the early eighties such a proposal was by no means a sure thing.

When Corona Data Systems debuted their first products — a portable and a desktop, both IBM compatible — at the November, 1982 COMDEX, the parameters of personal computing were strikingly different from what they are today.

In 1982 CP/M was still a viable growing reality, Apple was the tough, street-smart, home user-oriented new kid on the block, and IBM was the spoiled rich giant from uptown, grown bloated and boring from years of unchallenged corporate domination. Many felt that the rough-and-tumble world of the personal computer market was a whole new ballgame, one that the big blue machine from Armonk, New York, was too old, too out-of-touch, and too lazy to win.

Now, of course, things have changed radically. In the last few years, scores of different "IBM compatibles" have been brought onto the market as PC manufacturers around the world have united for a never-ending chorus of "Send In The Clones." Even such a stalwart proponent of CP/M as Kaypro has acknowledged the facts of life and has sought a piece of the PC pie with the AT-compatible 286i and the PC-DOS laptop Kaypro 2000.

And ironically, even while IBM has achieved an unprecedented standard in personal computing, the company has demonstrated a remarkable lack of market smarts in a variety of products, from the PCjr and the PC Portable to the AT hard disk and TopView.

Such embarrassments obviously don't bother Dr. Harp or his associates at Corona, however, for improving on the IBM standard is what life is all about in compatible circles.

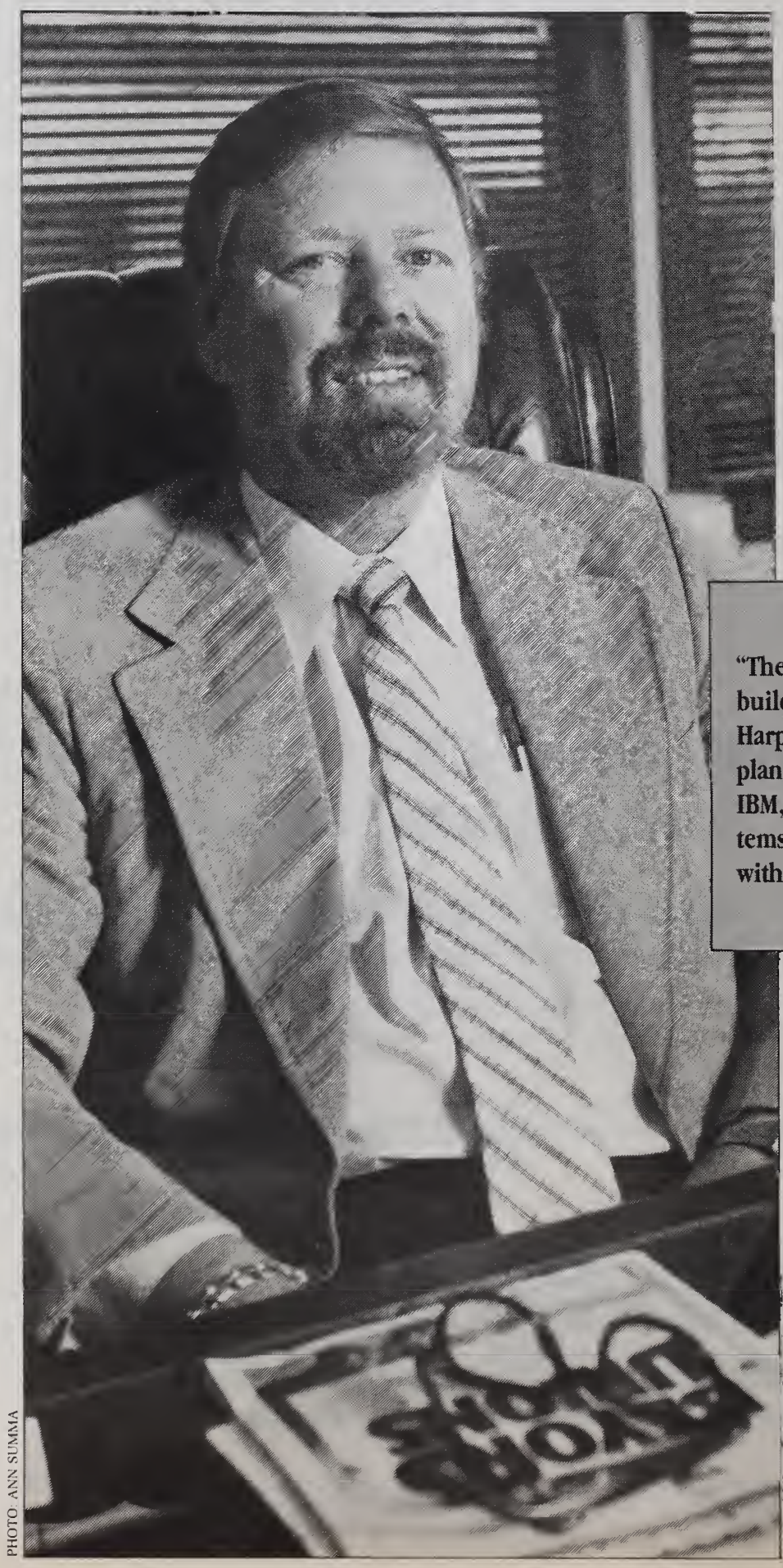

PHOTO: ANN SUMMA

"What we try to offer are products that offer some increased benefits over what's available from IBM," says Harp. "We offered a hard disk on our system six months before IBM did (on the XT). Originally the PC was targeted at the Apple II market — they had a system that used a tape cassette as the I/O device and an outlet for connecting to a home color TV. Well, they found out that (the home user) wasn't the market, and they sold very few of the low end configurations. We recognized the real market for the system — a business market. We provided half a megabyte of RAM on the main board when IBM had only 64K."

Giving more bang for the buck has proved to be a reliable strategy for Corona, for as Harp notes, simple imitation just won't do the job.

"There's absolutely no reason to build a PC clone," says Dr. Robert Harp, founder of Corona. "Our whole plan was to avoid competing with IBM, but it is essential to build systems that work with PC software or with the installed base of PCs."

"There's absolutely no reason to build a PC clone," he says. "That's not the purpose. Our whole plan was to avoid competing with IBM, particularly the first few years we were in business. But it is essential to build systems that work with PC software or with the installed base of PCs. That's where the market is."

With over four million installed PCs, he adds, makers of simple clones are doomed to failure. "In order to sell a clone you have to undercut them by 30 – 40%, so where's your profit?" he notes. "It's hard to stay alive in that business, because IBM has to be the lowest cost manufacturer, simply because of their tremendous volume and the fact that they take advantage of offshore manufacturing. The only way you can compete is by cutting your profit to the bone, and that doesn't give you any funds to advertise. You don't

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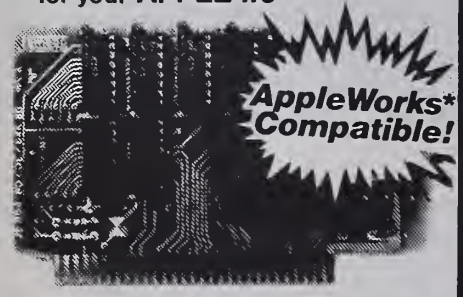

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have the economics of scale that IBM has, or the name."

The only solution is for compatible makers to satisfy a market that IBM has not targeted. A case in point is Corona's rival Compaq, which took advantage of the attractions of portability at a time when PCs were scarce and the demand was high.

Now that some of that demand has been satisfied, the only option left for compatibles is to offer systems that address needs that IBM has failed to meet or to create peripheral systems where IBM has been unable to set a standard. Corona, while slow out of the starting gate, has managed to build a sizable base (over $65 million in 1984) thanks to just such forward thinking. The Corona 400-series has received high marks from reviewers for its speed and excellent resolution, complete with two software selectable display modes — one which provides the IBM standard of 640 by 200 lines and an enhanced mode which features 640 by 400 lines.

More significantly, Corona has jumped into the peripheral fray with two products which deal with desires not yet standardized by IBM — printers and networking.

The Corona LP-300 laser printer offers text and graphics at a resolution of 300 by 300 dots per inch and supports several different fonts and type sizes on the same page. Images can be magnified up to 250 times vertically on the printer, which can push out copy at a rate of 500 characters a second (eight pages a minute). Compared to a number of other high quality printers, including the HP LaserJet, the Corona comes off like gangbusters, noted a recent rave review in *PC World* (July, 1985).

Also attracting notice is Corona's solution to the multi-user, multitasking confusion: the Corona Mega-PC, defined by Harp as "a network in a box."

"(The Mega-PC) really has the architecture that is ideally suited to run PC software in a true multi-user fashion," says Harp. "In the Mega-PC we have cards with the complete functionality of a PC plugged into a bus that is controlled by a master file server. The communication between these different cards — which represent different users — is by the parallel bus at a very high transfer rate. There's no delay in transmission and no corruption of the data by noise as you might get in a network. You also eliminate all the packaging and the multiple power supplies, boxes, and cables (found in linking separate PCs linked by a coaxial cable system)."

The multi-user system is the latest hot topic in the PC world, he adds. And sooner or later the issue of how such systems should be built will be resolved.

IBM compatibility, while not necessarily representative of the cutting edge of technological potential, is still a standard, successful because it benefits the end users as well as programmers.

"Multi-user applications have not yet developed," says Harp. "There are no applications for UNIX-based systems, and the alternative architecture, such as the LAN (local area network) or LAN-in-a-box (such as the Mega-PC) have yet to develop their full market potential. The jury is still out on (the standard)."

And in the world of PC compatibility, observing a standard is the name of the game — not just standards for the MS-DOS operating system, but for the IBM machine as a whole. That was the failure of CP/M, which Harp defines as "not dead but moribund."

"There's nothing wrong with CP/M," says Harp. "Certainly from a user's point of view MS-DOS is not a major improvement. The weakest point of CP/M was that it was not as complete a standard as MS-DOS is today. It didn't encompass things like memory mapped video, and disk formats — things which are not necessarily a property of the operating system but are (part of IBM) PC compatibility.

"Throughout the industry people are finally coming to the realization that (PC compatibility) is the only alternative," he adds. "Three years ago there were people with incompatible systems who were saying 'Oh, the PC is a flash in the pan. It's no meaningful way to go.' Well, it didn't work out for them. They're all coming to realize that you have to provide PC compatibility. The companies which still have incompatible systems are running into what I call the PC barrier — a barrier to selling any system which won't run PC software. If you look at the various channels of distribution, each is sensitive to compatibility to varying degrees. The most sensitive is retail, followed by OEMs and value-added resellers. The last stronghold of incompatibility are some of the mainframe manufacturers or large OEMs, which are still trying to sell systems that won't run PC software. Within the next year or so everyone will cave in."

IBM compatibility — while not necessarily representative of the cutting edge of technological potential — is still a standard, one that is successful because it benefits the end users as well as programmers.

"If you compare today to the old days of CP/M, the standard today is terrific," says Harp. "You can order a disk off the shelf and it will run on your system without any questions, providing it's fully compatible. There won't be any quirks, things that don't work. (The user) won't have to write custom drivers and things like that that you had to do with CP/M. And because there is such tremendous sales potential, software vendors are climbing all over each other to provide high quality competitive software."

And while things have certainly progressed thanks to the standard set by IBM, Harp says that continued expansions in power are not necessarily inevitable. The jump from 8-bit machines to 16-bit represented a major leap in potential. Jumping the next barrier may not come so quickly.

"I don't think that 32-bit is necessary," he says. "There will be true 32-bit machines on the market in a year or so. The first true 32-bit chip was the 68020, and people are designing that into multi-user systems, and there isn't really a big market for them. The Intel chip, the 386, probably won't see the light of day for another year or so. For general office purposes I think (32 bit) is overkill.

"It's not always true that things develop in one direction. Sometimes they come back. In automobiles, for example, they started with one cylinder and progressed up to four to six to eight and even twelve and sixteen cylinders. The old Lincoln V-12 and V-16 were luxury cars, but they weren't successful, so things retreated to eight cylinders. Now with the increased cost of gas we've gone back to six and four cylinders. I don't think that people need or can justify the cost of 32 bit systems, except in applications that are scientific or industrial where you really need to do a lot of number crunching."

Such views may not follow the standard Silicon Valley party line, but that's hardly surprising. While Harp received his Ph.D. in electrical engineering from Stanford, much of his professional life has taken place in the Southland. There are advantages to life outside the eye of the hurricane, he says.

"There's more information flow in the trade press than in the rumor mill," he maintains. "A disadvantage of being up north is that costs are higher and there's a tremendous turnover in people."

Operating outside of Silicon Valley does have its disadvantages as well, however. There are fewer engineers to choose from in Southern California, a fact that has led Harp to recruit many of Corona's designers from England where salaries are strikingly lower.

And while it's possible to pick up workers from abroad, it's not so easy selling computers there. Even though Corona has a strong toehold in Asia, thanks to a distribution agreement with its offshore manufacturer, Daewoo Electronics of Korea, the possibilities of breaking through in the blossoming Pacific Rim are less promising than some now speculate.

"They'll make their own (computer systems)," says Harp. "There are dozens of companies building PCs in Asia — in Japan, Korea, Taiwan, Singapore. And yet they haven't all recognized the importance of PC compatibility."

And compatibility is the bottom line — a fact that Harp says even IBM has failed to recognize. "Half of their systems don't even have graphics capability and therefore can't run a great percentage of the software," he says. "Half of the IBM systems out there won't run *Flight Simulator*. All of our systems run it. We feel we're much more compatible than IBM is."

"What we try to offer are products that offer some increased benefits over what's available from IBM," says Harp.

And, as of July 17, 1985, Corona is also much cheaper. Citing enhanced relationships with hardware suppliers as well as an improved financial position, Corona slashed prices by as much as 49% on a number of its most popular desktop and portable computers. For as little as $1495 one may now walk away with the PPC-400-22, which features 256K RAM, dual 360K floppy drives, dual resolution modes, four fully powered expansion slots, an enhanced IBM PC-style keyboard, and a main board memory expandable to 512K. For an extra $800 one can pick up the PPC-400-XT model which includes a 10-megabyte hard disk. ☐

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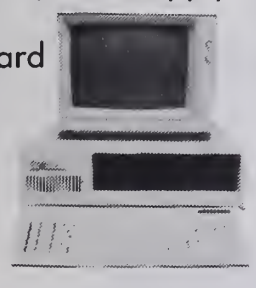

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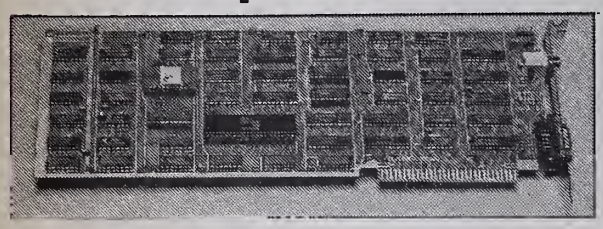
Color Graphics Board



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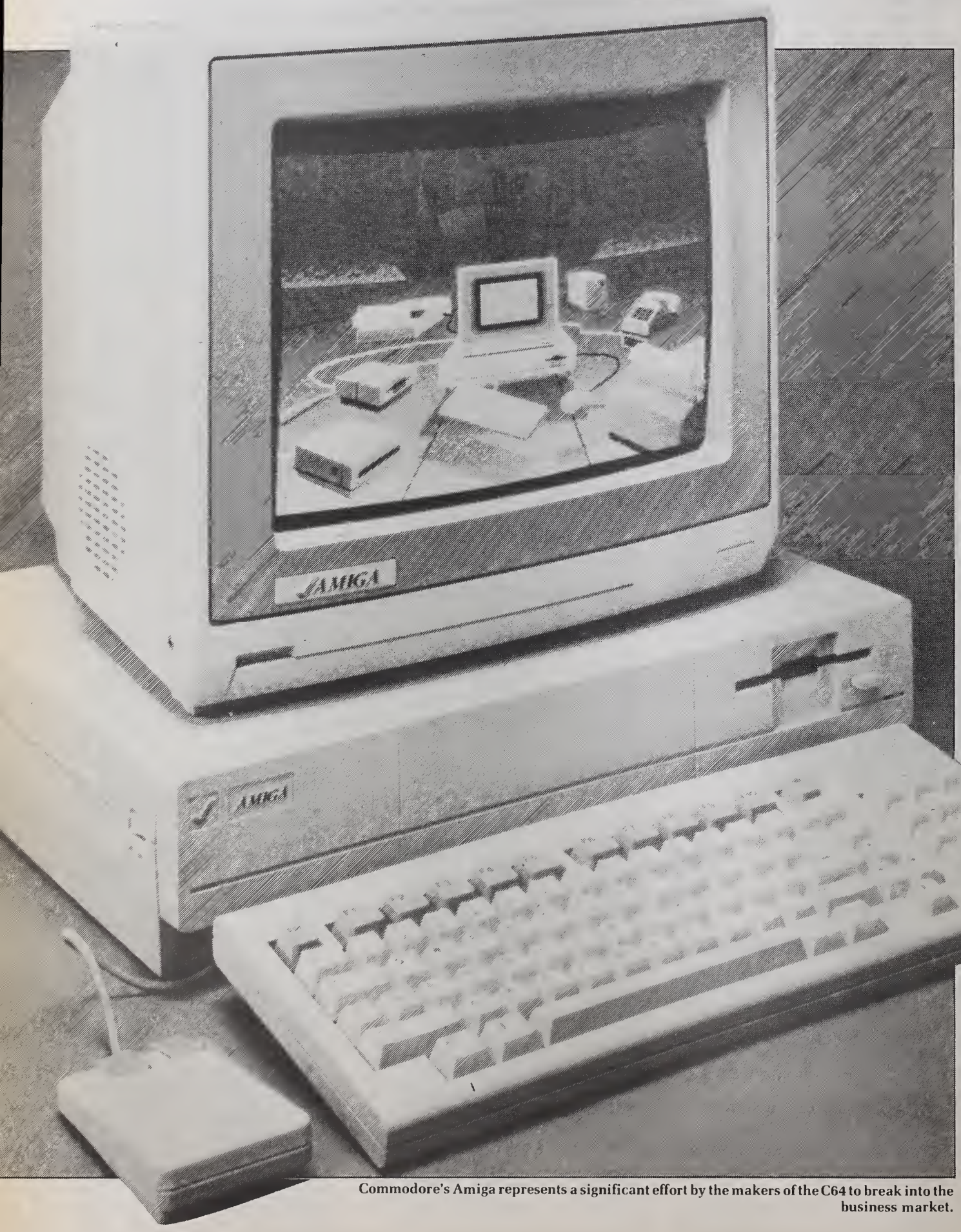
Preview Of Commodore's Amiga

By Matthew Leeds



Commodore's Amiga represents a significant effort by the makers of the C64 to break into the business market.

On Tuesday, July 23 Commodore International Ltd. announced the formal release of the long-awaited Amiga A1000 PC. In a black-tie gala at New York's Lincoln Center, over 2000 people were treated to an introduction to the computer that many software developers have called "the start of a new generation." Commodore hopes the Amiga will change its image from that of a mass-merchandiser of under-$200 game machines to that of a serious business computer manufacturer.

Commodore debuted the Amiga in San Francisco two days later at SIGGRAPH. The booth was mobbed from the moment the doors opened. In the words of one Commodore staffer, "We expected that we would get a good response, but nothing like this."

There is no question that the Amiga is a technological leap in both capability and cost. The Amiga runs the 16/32 bit 68000 and uses three special VLSI chips to control its powerful graphics, sound, windowing, and multi-tasking capability. The first thing you notice while watching the machine in operation is its speed. Since the display is memory-mapped video, the CPU does not need to calculate each pixel during every screen refresh. This frees it for other tasks, and the result is fast action in all respects.

Let's go into some details about the Amiga. The machine comes with 256K of RAM, and has an expansion port dedicated to the addition of another 256K of RAM at the front. There is also 192K of write-protected RAM used to store the operating system. Commodore has said that at some time in the future they might offer ROM chips containing a "finalized" version of the operating system; however, I think that this would be a bad idea. Look at the problems the Mac has had with its locked-in BIOS. The upgrade to the new Mac BIOS will require swapping chips, most likely through a

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- •Customized Text On Statements
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- •Automatic Sales Forecasting By Customer, Salesman, Or Customer Type

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128K memory, one 5 1/4 DSDD floppy disk, 132 column printer in compressed mode, 80X24 CRT, MS-DOS, PC DOS 2.0 or later.

Runs on your: IBM (PCjr/PC/XT/AT), AT&T, EPSON, TANDY (1000/1200/2000), TI, COMPAQ, CORONA, SANYO, COLUMBIA, ETC.*

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dealer. It's far easier to just boot a new version from disk.

The keyboard has ten programmable function keys, two special function keys, a 13 key numeric pad, cursor keys, and a "Help" key. The feel is fairly good, with only a little bounce. There is a caps lock LED. The keyboard is detached, and connects with a standard phone plug. There are little fold-down feet, just like on the IBM. In fact, visually the Amiga looks quite a bit like the IBM PC. The single 3½" disk drive is built into the main unit. It is a double density, double sided drive, with a formatted storage capacity of 880K. It uses Direct Memory Access read/write for fast data transfer. There is no room in the main unit for additional drives, however, it is possible to daisy chain three additional drives, either 3½" or 5¼". More on the 5¼" drive later.

The Amiga provides a powerful multi-tasking operating system and a user interface that features multiple windows, multiple screens, icons and menus, fast graphics and animation, great sound, and a two-button mouse. The system is expandable to over 8 Meg of RAM.

The display outputs are: RGB (digital or analog), NTSC composite video, and RF modulated video for connection to a TV. Recommended display is the RGB analog. Other output ports include a true RS232 serial port, Centronics parallel (reconfigurable), system expansion bus, stereo sound (RCA connectors), and controller ports (mouse, joysticks, graphics tablets, etc.).

The display resolution starts at 320 × 200 in 32 colors, and goes up to 640 × 400 in 16 colors. Playing some programming tricks, it's possible to get all 4096 colors on the screen at the same time in 640 × 400 mode, but you lose quite a bit of speed. There are eight sprites, sixteen pixels wide and any height, with collision and priority controls. The audio specs: signal to noise ratio 70 dB, distortion less than 1%, frequency response 20 – 6000 mh; impedence 300 ohms, four channels, each capable of playing a full chord; amplitude or frequency modulation, or both.

Included with the system will be the operating system software called AmigaDOS, a user interface called Intuition that is icon driven and uses a two-button mouse, Microsoft BASIC customized for the Amiga, a system tutorial on-disk written by Mindscape, and a text to speech package in either a male or female voice with unlimited vocabulary. Also included will be a Command Language Interface for programmers and sophisticated users who prefer direct access to DOS. Dealers will have a choice of bundling a low-res paint program called *Graphicraft* by Island Graphics and a word processor called *Textcraft* by Arktronics.

Commodore has also announced several peripherals. The A1080 monitor has RGB analog and digital inputs, as well as a NTSC composite video input. Its bandwidth is greater than 10 mh, and it has a .39mm dot pitch. Price will be $495.00. The A1050 modem is Hayes compatible, 1200 or 300 baud, auto answer/dial, with most of the expected bells and whistles. No price was mentioned.

There are also several disk drives available. There are two types of 3½" drives. If you are buying your first additional drive, it will not require a separate power supply, as it will derive its power from the computer. However, any additional drives will require their own power supplies, hence there are two types of drives. Also available is a 5¼" drive, plus software that will allow it to read/write MS-DOS format. Commodore has also stated that the software will allow for IBM-PC emulation without the use of a co-processor. That's right, they claim to have run *1-2-3*, *Flight Simulator*, *dBase III*, *MultiPlan*, and other packages right off the shelf. Although prices were not being given as "firm," the additional 3½" drives were quoted at around $300, and the 5¼" at $400.

Several third-party hardware developers have announced products for the Amiga. A-Squared Systems of Oakland has produced the Amiga Eye, a color video digitizer. This device will capture a NTSC video image in real time (8 grey levels) or in three frame scans (color) and allows you to manipulate the hue, saturation, luminance and brightness over the computer's full range of 4096 colors. It is fully compatible with all of the paint and graphics software available for the Amiga.

Kurta Corp. announced the Penmouse, a battery powered cordless pen that uses a graphics tablet to allow a more natural movement when digitizing drawing or other flat art.

Tecmar has several products available for the Amiga. The T-Card is a multi-function expansion card that can contain up to 1 Meg of additional RAM. It features a serial port, clock/calendar w/battery backup, hard disk interface, parallel printer port, and its own power supply. The T-Disk is a 20 Meg, 3½" hard disk for the Amiga. The T-Tape is a 20 Meg tape backup unit that can be linked to the Amiga through a floppy disk port. It has its own power supply. Tecmar also announced the T-Modem, a Hayes-compatible modem with selectable 300, 1200, or 2400 baud rates.

There is also quite a bit of software for the Amiga. Word processing, database, spreadsheet, business graphics, accounting, and telecommunications packages are either available on release or by year's end. Several languages and programming tools have also been announced. Lattice, Inc.'s compiler, MS-DOS cross compiler, UNIX cross compiler, VAX cross compiler, LMK, LSE, and TMN will be available at once, as will TLC-LOGO from The Lisp Company. Metacomco is releasing an Amiga assembler/linker, Cambridge LISP 68000, and MCC Pascal 6800.

The Amiga is a wonderful game machine. Electronic Arts will release over a dozen titles by Christmas, six of which will be written just for the Amiga. Infocom has put its entire product line out for the Amiga, Sublogic has a new flight simulator called *Radar Raiders*, Mindscape has a mystery game called *Deja Vu*, and Hayden has put out *Sargon III* with nine levels of play and a library of over 68,000 moves.

Music software will reach new highs on the Amiga's four-channel stereo sound. Cherry Lane Technologies will release several music creation packages. Sequencing, scoring, editing, and printing musical compositions will be supported. MIDI interfaces will also be available. The Amiga has powerful sound sampling capabilities, and there has been talk of a digital sound sampler. Marc-Aaron Canter of MacroMind (*Videoworks For The Mac*) says that with the proper software, the Amiga should be at least as good as the Ensonic.

Distribution of a high-end computer may be a problem for Commodore. Dealers are wary of getting burned after Commodore cut the price of the C64 from $595 to $200 and sold it through mass merchandisers. Although Commodore has made no announcements on a dealer network, Frank Leonardi, Commodore vice president of sales/business, has been meeting with members of the Association of Better Computer Dealers (ABCD) and promising that the Amiga will be kept out of mass market channels. The Amiga will need computer speciality retailers for proper end-user support, and it would be self-destructive for Commodore to allow mass market merchandisers to sell it.

One solution to the marketing problem is Value Added Resellers (VAR). These dealers intergrate hardware and software into vertical market systems that meet specific needs. The potential applications of such systems are limited only by the imagination of programmers and developers. Architects, motion picture and television producers, fashion and textile designers, map and chart producers, typesetters, and CAD/CAM applications are but a few of the possibilities. Interior designers, landscapers, musicians, art directors, commercial artists, engineers, and educators will find a variety of unique applications waiting for their use. The Amiga brings the power and speed of computers costing ten times as much within the reach of small businesses.

Commodore is already "not talking" about the Amiga II, a multi-user system that will address the needs of big business. There is currently no local area network capability for the Amiga, and a new computer using the 68020 would fit the bill nicely.

What this all adds up to is a color Mac with 512K RAM, MS-DOS capability, true multi-tasking, stereo sound, and an open architecture for under $2500.00. Commodore has committed itself to releasing all the technical specs and info that third-party developers need to create dynamite hardware and software for the Amiga. The expansion bus has full access to the 68000, and there are no design-imposed limits to the potential of the machine. As with all new computers, there will be a lag in the release of some software that you might want, but with access to the MS-DOS library, I imagine that most users will survive until applications that take full advantage of the Amiga's capabilities arrive. Commodore has come up with a winner. □

Specs For The Commodore Amiga

Suggested price without monitor: $1295. Availability is anticipated in September.

Microprocessor:	68000 Motorola
Speed:	7.15 MHz
Memory:	256K RAM 192K ROM
Expansion:	Up to 512K internal Up to 8M external
Disk Capacity:	880K 3½ inch
Display:	RGB analog/digital Composite video RF modulated (TV)
Color:	4096 possible
Resolution:	320 × 200 320 × 400 640 × 200 640 × 400
Keyboard:	89 keys Numeric keypad
Music:	4 channels, Stereo
I/O Ports:	RS232 Centronics parallel External disk drive Controller ports (2) 2 button mouse Joysticks Light pen Graphics tablet Optical scanner Game paddles Video, RF, RGB Graphics expansion bus System expansion bus Audio (2) stereo Keyboard
Speech synth:	Yes (text to voice) Male or Female voice
Software:	Amiga DOS Intuition overlay ABasic System tutorial
Additional languages available:	Pascal, Logo, C, Assembler
Additional peripherals available:	256K RAM pack Frame grabber (color) Digitizing tablet MIDI interface Hayes compatible modem 3½ inch drive 5¼ inch drive w/MS-DOS R/W capability Hard disk w/tape backup 1M RAM multi/function expansion board

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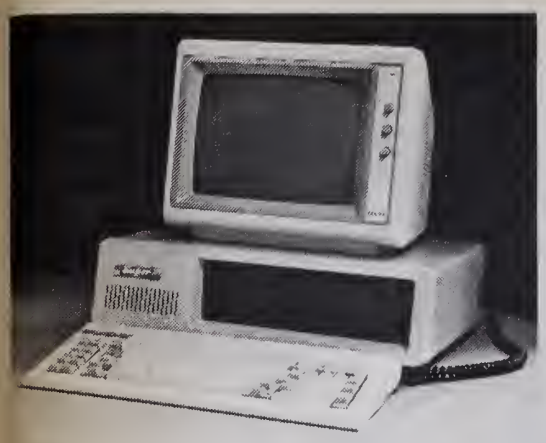

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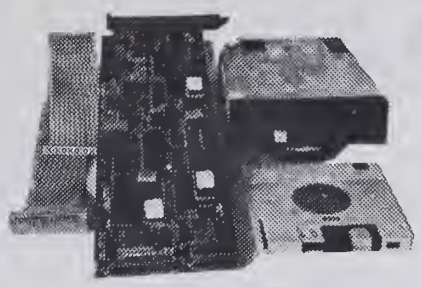

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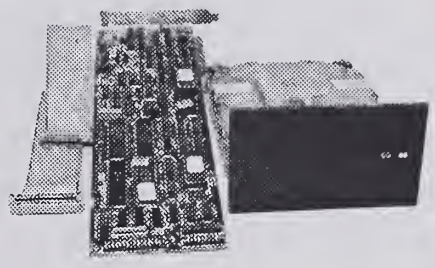

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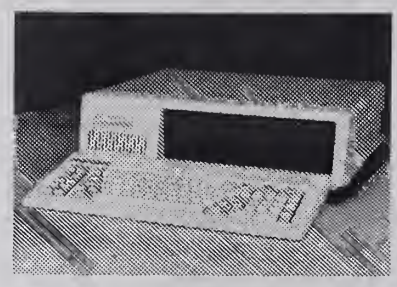

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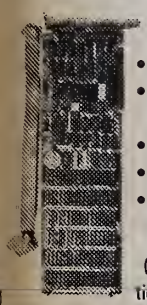

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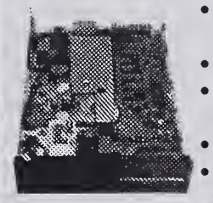

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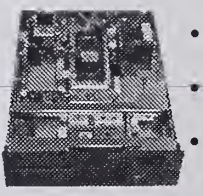

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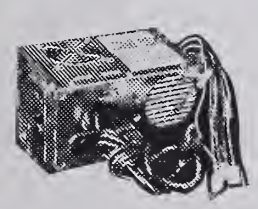

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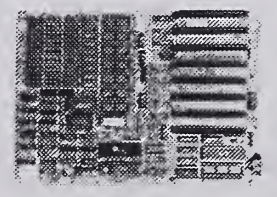

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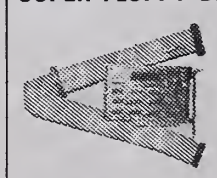

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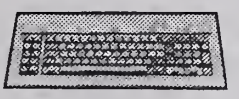

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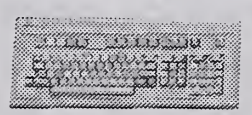

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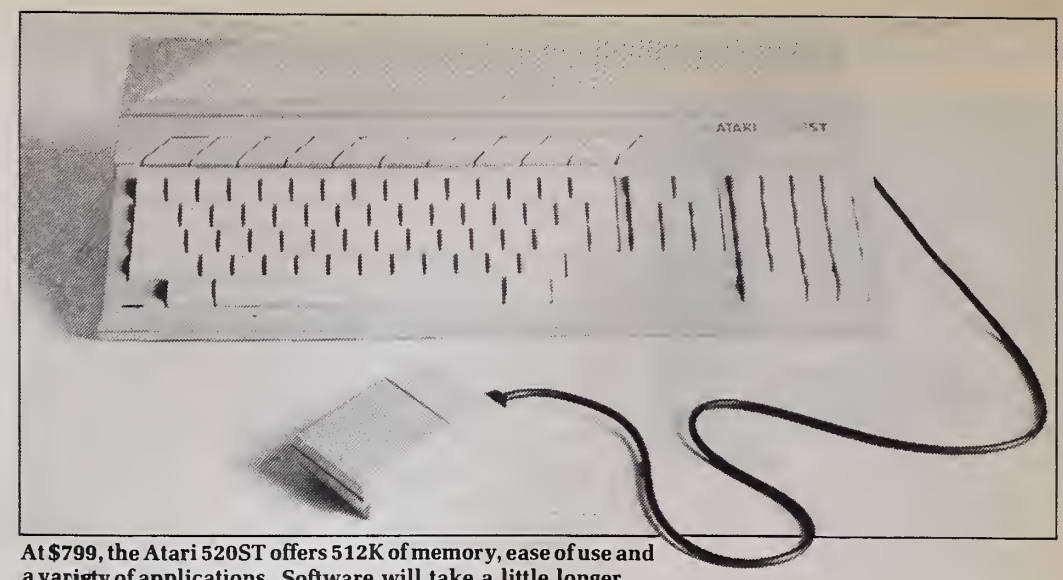
The Atari 520ST: First Impressions



At $799, the Atari 520ST offers 512K of memory, ease of use and a variety of applications. Software will take a little longer.

By Mike Fulton

Mike Fulton is a member of the Atari Computer Association of Orange County. Last June Atari user groups were given the opportunity to purchase 520ST systems at a discount, and ACAOC took advantage of the deal. Mike files this report on the new computer's performance.

Based on the MC68000 CPU, the 520ST has 512K of RAM, parallel printer port, RS-232 serial port, built-in floppy and hard disk controllers, MIDI port for music synthesizers, and the GEM desktop from Digital Research, a graphics interface allowing windows and pull-down menus controlled by a mouse. Originally announced as having its operating system in ROM, the 520ST currently loads it from disk, although it will be available on ROM at a later date. GEM is also available for MS-DOS computers, so there should soon be plenty of new software for GEM machines.

For me, one of the 520ST's most important features is the keyboard, with 94 keys, full numerical keypad, cursor control keys, and 10 function keys. The numerical keypad has a large Enter key which duplicates the Return key. The function keys are together in one long row above the rest of the keyboard, nicely out of the way until you need them. The cursor keys are arranged "left-down-right," with "up" right over the "down" key.

The cursor keys can also move the mouse pointer if the Alternate key is held, but it's on the other side of the keyboard, so you have to use both hands to do it. Still, being able to perform the mouse functions from the keyboard will make a lot of users happy.

I really like the feel of the ST's keyboard. The keys provide good tactile feedback. They are neither too mushy or too stiff.

The ST mouse has two buttons, but with its far superior keyboard, programs for the ST probably won't be as mouse-bound as on the Macintosh. Two buttons should make it even more versatile than the Mac's mouse. Remember that you'll need a little extra desk space to roll it around.

The disk drive is the 3.5 inch type. The package came with a single-sided version, which holds 360K per disk. A double-sided version holds 720K. The drive is quiet and fast, compared to those for the 8-bit Ataris. The operating system and GEM desktop accessories use 228,572 bytes on the disk (not every disk, just the one you boot with), but it takes less than 35 seconds to load. Formatting a new disk could be faster at about 50 seconds. With two drives, a disk copy takes about 1.5 minutes.

The display is a 12-inch black and white monochrome monitor with an extremely crisp image. With black letters on a white background, it's almost like looking at a sheet of paper. A cable comes out of the back of the monitor to plug into the computer. There are no other video inputs. I wanted to use it with my Atari 800 and 130XE, but I doubt I'll be able to find a 13-pin socket to make an adapter. Unfortunately, there are no external controls to adjust the picture size, and my monitor has too much overscan. Also, there's no handle or grip to pick it up with.

GEM has all the expected features for manipulating files. The files and folders can be viewed as either icons or as text, and can be sorted by size, type, name, or date. There are different icons for files, programs, or folders. Copying files is done by picking up the icon of the file to copy and dragging it to the destination. Copying a disk is done the same way. Deleting a file is done by dragging it to the trash can icon. You can set whether copy and delete functions need to be confirmed under the Set Preference option.

GEM windows are easy to manipulate. You can control size, move the window to a new location, or even make it take up the full screen if you want. To close a window, you just click the mouse at the box in the upper left corner.

From the Desk menu you can set up the RS-232 port or printer configuration, or use the control panel to adjust the key repeat rate, mouse sensitivity, screen colors, or set the time and date. You can also choose an option called VT52 Emulator. This terminal emulation program lacks features like uploading or downloading, but it's nice to have built-in. There is no calculator, however. Some users will miss this, and I hope it is included in future versions. The accessories are in separate files from the main desktop, so they may be quite easy to expand.

From the Options menu you can set system preferences and defaults, or install new applications. There's even a screen dump to a graphics printer.

Unfortunately, ST BASIC isn't yet ready, so ST LOGO was all I had to play with. It's such a good version of LOGO, the wait for other languages won't be that painful. (ST BASIC will be out by the time you read this.) ST LOGO has every feature of LOGO that I've ever heard of, and a lot of extras. Besides the usual turtle graphics routines, there are procedures for setting different line and fill patterns. There are routines to draw circles, boxes, arcs, ellipses, and more. Graphics screens can be saved or loaded from the disk drive. ST LOGO sports a wide range of list manipulation procedures.

ST LOGO uses separate windows for the graphics, editing, debugging, and main dialog. For debugging, a window can show what procedure is being performed, and the values of its parameters. You can even pause a program while it's running, change part of it, and then continue!

The edit functions in ST LOGO work quite well. Cutting and pasting blocks of text is easy using either the keyboard or the mouse. However, it can only be done at the cursor position, and you can't use the mouse to move the text cursor. Also, marking a block of text doesn't highlight it.

The 520ST manual is nicely done, but I want more. It tells how to hook up the computer and peripherals, and then leads you through the many options of the GEM desktop. It has pinouts for all the ports on the back of the computer. However, there is no memory map of any kind, and I want one!

The ST LOGO manual seems rushed. While the 520 manual is nicely printed, the ST LOGO manual is on stiff white paper and stapled together. It tells little about many of the procedures of ST LOGO. It does explain the menus and windows and tells how to set the various graphics options. The 520ST with ST LOGO could be an extremely attractive package to schools, if the ST LOGO manual is redone.

Digital Research is working on a GEM Write-Paint-Draw-Calc-Graph series. Hopefully, these can do for the ST what *MacWrite* and *MacPaint* did for the Mac. While at Atari, I saw an upcoming drawing program that will blow you away.

There is a software development package available, with a text editor, telecommunications program, C compiler, 68000 assembler, utilities, and hundreds of pages of documentation, but it costs about $300 — more than I can afford right now. Atari should make this more easily available as soon as possible, making it possible for more people to develop software. The wait for software will be the biggest stumbling block for this machine.

The hardware of the ST gives you more for your dollar than ever before. At $799, you could almost buy three complete ST systems for less than a single 512K Mac. The built-in hard disk interface makes mass-storage easily affordable. The CDROM, an upcoming laser disk storage device, will enable the ST to have almost instant access to databases larger than 500 megabytes. With the RGB color monitor, you have access to 512 different colors, up to 16 of which can be used at a time without any special tricks.

If you don't mind waiting for software, or can write your own, I think the Atari 520ST should be given a good hard look. The ease of use and versatility the GEM interface provides, combined with the speed and power of processors like the 68000, is where the personal computer world is headed, and the ST is one of the first ones there. □

Who's Using Those CP/M Machines?

Hints For A Motley Assortment Of Users

By Robert D. Athey, Jr.

How do you use your computer? You bought it for a reason, and rationalized the purchase because of some software, be it word processing, financial, or even games. But now that you have it, what do you use it for? Do you consider yourself an expert?

What prompts the first question is a survey of the Bay Area Computer Users and Programmers (BAKUP) newsletter readers. Twenty-six percent of the 600+ subscribers responded to the written survey. Of those respondents, almost 80% use their Kaypros in a business. The most frequently used software was the word processing group, and usually that which came with the computer. Most users had a dot matrix printer. The more casual survey at the last BAKUP meeting showed similar results.

The biggest group of users seems to be the writers, and they are fairly heavily represented in meeting attendance. They come in two groups, those who do their writing for a school or university (assignments, theses, dissertations), and those who (attempt to) write for income (articles, books . . .). Interestingly, with the latter comes a fair amount of confirmation that editors will accept good clean dot matrix printing. The editors will send you a copy of their guidelines, and sometimes ideas on articles they need, if you request it. It is advisable for writers to print in bold-face throughout their manuscripts. Double spacing and good wide margins are also preferred by editors.

Editors comprise another large group of users. The *Daily Californian* (the UC newspaper at Berkeley) uses Kaypros. The *American Paint and Coatings Journal* finds an Osborne, a Kaypro and one other machine especially useful during the National Paint Show, when they put out daily editions of about 70 to 80 pages of newspaper sized glossy print. Some editors will advise writers to submit a disk with the manuscript, just to ease editing and transmission to the printer.

If the writer has a concern about the compatibility of word processing programs, there's an easy way to get around that problem. Go ahead and construct the manuscript with the word processing file in the *WordStar, Perfect Writer, NewWord, WordPlus*, or whatever. That way, the writer can make use of spelling checker programs, paragraph moving, search/replace, and all the neat tricks the word processing system does. Then, the file can be converted to an all-ASCII file by deleting all the special formatting and printing commands peculiar to the word processing system. The ASCII file can then be printed by use of several options, such as:

1. CP/M "TYPE" command, after the "control P" command to turn on the printer;
2. CP/M 2.2e "TYPER" command; or,
3. "NEWSWEEP" special print option "P".

This way, the disk manuscript can be read and manipulated by the editor with *any* word processing program. (Credit this idea to Nancy Mulvany, BAKUP Newsletter Editor.)

Make it easy for the editor to use your disk by converting the word processor based manuscript to ASCII. If you know what computer the editor uses, convert the format to that computer before you send it in by a program like *Uniform, Compat* or other interpreter.

There are other writers, too. The lawyers are a small but active segment of the user group. Word processing frequently-repeated standard text is a real help to the lawyer. Others who process contracts, such as real estate agents, find their personal computer usage increasing. One of the most effective uses of the word processor is the preparation of bids, or proposals for sale of goods or services to governments. Many of the proposals or bids require attachments, such as resumes of people involved or descriptions of the company. These resumes or company descriptions can be slightly modified to focus directly on the target topic of the bid or proposal to add to the attractiveness of the writers for an award.

I was surprised to find the number of scientists (physicists, dieticians, chemical engineers, chemists) who use the personal computer for reports, letters and such. This group also does scientific calculations occasionally and considers this function important, though word processing is their most frequently used application.

According to a recent BAKUP survey, nearly 80% of Kaypro owners use their machines in a business.

The surveys show a small number of people use their personal computers for bookkeeping functions. If you run a small business on a cash basis, as I do, the small computer can be quite adequate. Indeed, I know of a paint company that runs its books on an Apple. I don't know how they do that, but my business records for 1984 just barely fit the 64K buffer, and I have more line items this year. I adjusted to keeping my disk files on a quarterly basis for 1985. This also speeds up the operation of the spreadsheet program, as it has fewer recalculations to do. Don't forget to back up the files frequently. If you can turn off your recalculate function of the spreadsheet, do it for very large files before entering new data. You'll save a massive amount of time.

Now for a shift in emphasis! The State of California has opened a remote bulletin board on Air Pollution Research Information. The RBB is for use by the general public, under the sponsorship of the California Air Resources Board with no CARB charge for access. The RBB may be reached with your modem at 300 baud by calling (916) 324-6997 (the phone charges are your expense). The topics available are:

1. Summaries of current ARB research projects;
2. Abstracts of research projects completed within the last 12 months;
3. Public message bulletins on air pollution research-related announcements by users;
4. Electronic mail for ARB contract managers or for queries by users on research programs; and,
5. Announcements by ARB on decisions that were made by the Research Screening Committee or the Acid Deposition Scientific Advisory Committee and those that approve or fund ARB related research projects.

The times of operation of the RBB are essentially non-working hours (weekdays after 3:30 PM and before 9:00 AM, all 24 hours on weekends and holidays). For further information, dial up and type in "H", or write: Mr. Fereidun Feizollah, ARB Research Bulletin, Research Division, 1800 15th St., Sacramento, CA 95812.

That's a dandy way for air pollution information to be made public. What a source for up-to-date information for writers, broadcasters, students and researchers. I hope the water pollution, parks and health agencies set up something similar. □

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contract research. He can be reached through MicroTimes or at (415) 526-3541.

EXCEL:

Microsoft Takes The Spreadsheet A Step Further

By Barbara Leone

Excel, the much-talked-about spreadsheet and graphics program to be released in September for the Macintosh, is everything Microsoft said it would be and more. I've been working with a beta test release of the product, and even with this test version I was overwhelmingly impressed.

If this program doesn't sell Macintoshes for Apple, nothing will. For all of those *Lotus 1-2-3* users who wanted to throw away their IBMs and use a Macintosh, but couldn't pry themselves away from all of those old *Lotus 1-2-3* files, there's good news—*Excel* has two way file compatibility with *Lotus 1-2-3!* The only major limitations are with the conversion of *1-2-3* macros to *Excel* macros and *1-2-3* graphs to *Excel* charts. Cell properties do convert: format, protection status, and formulas or values and names.

The *Excel* spreadsheet is 256 columns × 16.384 rows; it is amazingly fast, and has the most advanced problem-solving capabilities of any spreadsheets I have seen to date for a microcomputer. The ease of use in creating macros cannot be compared on any other computer.

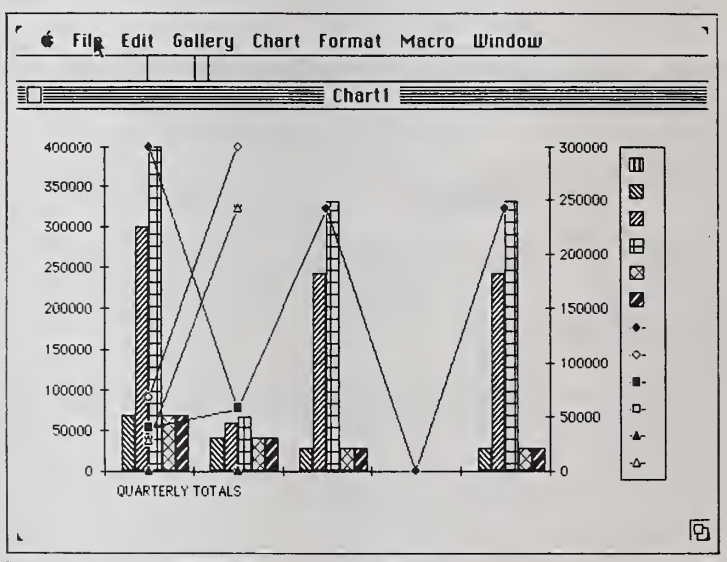
Presentation graphics using spreadsheet data are as easy as pointing and clicking the mouse. The charting program allows for 42 pre-designed charts. Several windows can be displayed on the screen at one time, allowing the user to watch the effect on a chart while changing the information on an associated spreadsheet.

Formatting the spreadsheet, or "worksheet" as Microsoft likes to call it, comes from simple menu commands. It allows for variable fonts and font sizes, plus bold and italic options, for individual cells or regions. There are five border styles for individual cells or regions, 19 pre-designed number formats, including date, time of day, currency, percent, and decimal as well as user definable number formatting.

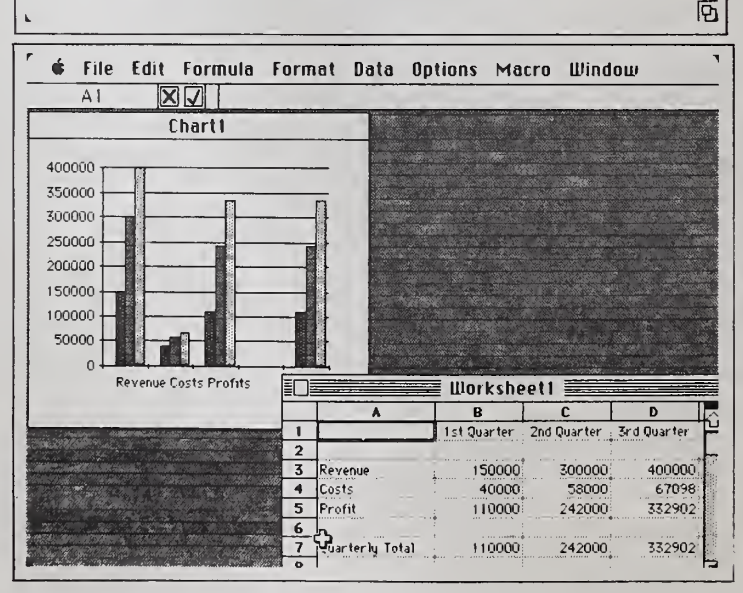
Any part of a worksheet can be used for database management. No new commands are needed to run the worksheet as a database, and full information management capability is provided for the query, sorting and extracting of data.

An enormous number of functions are built in for the user to choose from when building formulas. These include not only the mathematical and statistical functions but special functions for the database, trigonometric functions, logical, text, and financial functions like Net Present Value (NPV) for real estate calculations and (RATE) Rate returned on investment; there are also date functions and other special purpose functions such as LOOKUP and INDEX used with arrays. The unique array-handling abilities of *Excel* make it an outstanding tool for complex analysis-like linear programming. With *Excel*, a formula can perform calculations on multiple values simultaneously or return multiple values from a single calculation.

The most powerful feature of all is the macro language. For the most serious spreadsheet users the macro language gives the capability of writing automated applications, automated templates and user-defined functions. It is so powerful, in fact, that if the user so chooses he/she can create complete custom applications that automatically build a spreadsheet or chart while prompting the user for input.



***Excel*'s charting program allows for 42 pre-designed charts to suit a variety of needs.**



Several windows can be displayed on the screen at a time, allowing the user to watch the effect on a chart while changing the data on the associated spreadsheet.

Spreadsheets for Macintosh are currently flooding the market, and I have had the opportunity to examine the most well publicized, such as the *Jazz*, *Crunch*, *Quartet*, and *Multiplan*. As far as I'm concerned, no spreadsheet for the Macintosh or the IBM compares to this one for overall speed, power, and flexibility.

If you are one of those serious spreadsheet users that was patiently awaiting the release of *Jazz* to get down to business with your spreadsheets, look again. *Jazz* does not even come close to this spreadsheet.

More good news! If you already have *Multiplan* and *Chart*, you're in luck, because Microsoft is offering a $100.00 upgrade to *Excel* ($200.00 if all you own is *Multiplan*). The program retails for $395 and will be bundled with Switcher, allowing the user to switch quickly and easily between other applications such as *Microsoft Word* or *MacWrite*. □

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with businesses of all sizes, training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.

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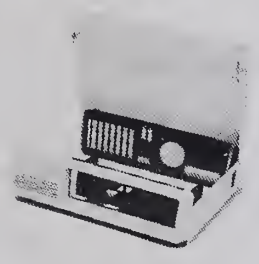

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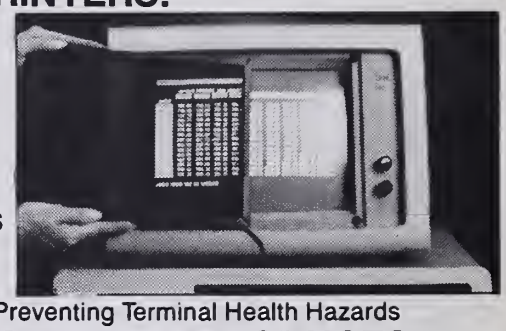

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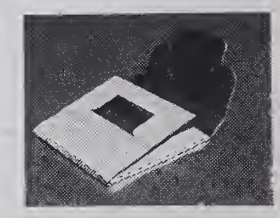

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Communications For A Small Planet

By Brock N. Meeks

"The Medium is the Message," because it is the medium that shapes and controls the search and form of human associations and action.

— Marshall McLuhan

Good communication is as stimulating as black coffee, and just as hard to sleep after.

— Anne Morrow Lindbergh

The scope of telecommunications is worldwide, creating a fertile environment for the birth of a global community. Free from the constraints of time and geographic boundaries, microcomputer-based telecommunications make the world smaller for each of us.

In San Diego a group of university professors communicate daily with associates in six foreign countries, via an elaborate maze of electronic networks. They talk about issues vital to the understanding of "how culture influences thinking."

A San Francisco executive walks into a Porsche dealer wanting to buy a custom Turbo-Carrera. He doesn't even know if the car exists. The Porsche dealer sits down in front of a microcomputer and taps into Porsche's "car-finder" satellite-based communications network (which lists the location of every car Porsche rolls off the assembly line). He checks an online worldwide database of Porsche dealers and finds the car in Miami Beach. Mr. Executive gets his car in six days.

A yuppie couple (after a dinner of Lean Cuisine breaded veal) dials into SKI-NET, a free access database that contains information on every ski resort in the world. They plan their next ski trip by comparing the resorts in Vermont with those of Tahoe.

A fourteen-year-old junior high school student logs onto the "Astronomer's BBS" to enter his latest observations — gleaned from a backyard telescope perusal of the heavens. He notes an entry from a user in Panama and downloads it to his disk. An hour later an astronomer from the National Astronomy and Ionosphere Center logs in and downloads an entry left by a fourteen-year-old junior high school student.

Over a period of four months an Alaskan lawyer falls in love with an Atlanta, Georgia woman he has never met. Instead they carry on an amorous electronic love affair (love in the phosphor), using the electronic mail facility of The Source (an information utility). Tonight he will log on to read his electronic mail, and find a message from her telling him that she is black and a paraplegic.

Telecommunication via microcomputer and modem is a true frontier, with uncharted explorable "territory" and adventure around every corner.

He sends her a plane ticket to Alaska and marries her three weeks later.

Illustrations like those above are not unique. Telecommunications will change what people do worst: communicate. Communication involves the transferring of information from one person to another, in some manner. And in today's "instant everything" society we don't always have time to communicate in an effective way. Telecommunications gives us the availability of time: a commodity beyond price.

Yes, I know the skeptics will scoff, "Electronic communications will never replace face-to-face human interaction." Let's hope not, but it can improve on those face-to-face meetings.

Typical face-to-face meetings require immediate responses, and bring the entire gamut of psychological foreplay to bear on even the most innocent of conversations. Telecommunication augments those conversations.

Corporate board room meetings can now take place via computer conferencing systems. People intimidated by the presence of corporate "power" personalities can now think through their responses, shape and mold their ideas, without the pressure of board room power plays. They simply log into a computer conference and type in their thoughts.

Scientists, buried all day in the give-and-take of a laboratory, can relax and trade opinions and comments with scientists from all over the world via an electronic message system.

Learning disabled students, once segregated from traditional learning environments, take regular college courses through an "electronic university." They are able to take as much time as they need to respond to the professor's questions — suddenly their "handicap" is transparent.

Telecommunication via microcomputer and modem is a true frontier, with uncharted explorable "territory" and adventure around every cursor. "Electronic activists" monitor the growing number of legislative pressures seeking to regulate the online community. An obvious "majority" dominates activity in the online community — potentially "locking out" a large segment of the population. (Tell me there's no "adventure" when a community goes online with public terminals, such as Berkeley's "Community Memory" project.) Then there are the "larger" questions.

The social and cultural implications of the medium need examining. Who owns all this information? What do you do about "information overload"? How do you insure privacy? Do electronic communications deserve the same freedoms as the spoken or printed word? (The California legislature has a bill before it right now that would guarantee the "electronic freedom of speech.") Who is going to answer these questions?

We are. As charter members of the Information Age, we are setting the ground rules for generations of telecommunicators. When was the last time you had this kind of an opportunity to affect the future?

In this column you and I will travel through this global community. I'll keep you informed, amused, and up-to-date about what's happening in the world of telecommunications, and how to become involved in it. Sparing you the "techno-jargon" of some of my colleagues, I'll share with you the "how-to's" of this Information Age cultural phenomenon.

If you have any questions (yes, I see that cursor), I welcome the opportunity to answer them. You can reach me in care of **MicroTimes** or through the following electronic address:
The Source's Participate section as: Brock Meeks; CompuServe: 70366,1355;
MCI Mail: BMEEKS;
ARPANET: BROCK@UCSD;
USENET: inhp4!sdcsvax!crash!brock.

So, until next month, I'll see you here. □

Indexing dBase III Databases

By Bill Amatneek

Indexing is one of *dBase III*'s most useful functions, but many beginners are intimidated by it. Here are some hints for getting comfortable with the procedures.

Indexing is a subject dear to most *dBase* users' hearts. It is the approved way of re-ordering the records of a database, and yet some beginners have problems getting friendly with indexing. Let's take a short tour of indexing with this database example which you can key in at your computer. Get into *dBase III* as you usually do, and

.SET TALK OFF
.SET SAFETY OFF
.SET HELP OFF
.SET DEFAULT TO b: (or .SET DEFAULT TO c: for hard disk users)
and
.CREATE example
to look like this:

B:example.dbf	Bytes remaining:	3983
	Fields defined:	3

	field name	type	width	dec
1	NAME	Char/text	7	
2	NUMBER	Numeric	2	0
3	DATE1	Date	8	
4		Char/text		

When your cursor is on line 4, hit <**Ctr1**> <**End**> to save your work. When prompted to: **'Hit RETURN to confirm — any other key to resume,"** hit <**RETURN**> again. When prompted to: **"Input data records now? (Y/N),"** enter a **N** for No, and then type in:

.APPEND

Add these 5 records to the database:

Record No.	1
NAME	Zilch
NUMBER	0
DATE1	01/01/01
Record No.	2
NAME	Able
NUMBER	99
DATE1	12/31/99
Record No.	3
NAME	Smith
NUMBER	50
DATE1	01/31/85
Record No.	4
NAME	Smith
NUMBER	1
DATE1	01/01/85
Record No.	5
NAME	Smith
NUMBER	50
DATE1	12/31/84

Bill Amatneek will teach dBase III Programming classes the week of September 16 – 22, 1985 at the Mill Valley Howard Johnson's. He can be contacted at 415/388-8024 for more information.

When you arrive at Record No. 6, exit from the append mode by pressing <**RETURN**>. Then:

.USE example
.LIST

Record #	NAME	NUMBER	DATE1
1	Zilch	0	01/01/01
2	Able	99	12/31/99
3	Smith	50	01/31/85
4	Smith	1	01/01/85
5	Smith	50	12/31/84

If you were asked to re-order the records in the database above, your first question would be "On what basis do you want them re-ordered?" We can re-order the records based on the data in any field, in our case: **NAME, NUMBER** or **DATE.**

(The order of re-ordering is: Numbers first, then lowercase letters, then uppercase letters, That is, 0 – 9, A – Z, a – z. The various other keyboard signs and squiggles are dispersed among these three groups, logically, I'm sure.)

SIMPLE INDEXING

INDEX ON is a command which will make it appear that the records in a database have been re-ordered on the basis of the data in a field that you indicate. The Syntax is:

INDEX ON fieldname TO indexfilename

You supply the **"fieldname"** from one in the file you have open. And you make up the 8-letter **"indexfilename,"** to reflect in one short word what the index is about. Sometimes we use the name of the field we are indexing on for the indexfilename. *dBase* tacks a **.ndx** extension on to the end of your indexfilename, and saves it as an Index File.

An indexed database behaves as though its records have been physically re-ordered. The indexing process is transparent to the user; only the out-of-sequence **Record #**'s seen during a **.LIST** of an indexed file reveal that the file has been indexed:

.INDEX ON name TO name
.LIST name

Record #	name
2	Able
3	Smith
4	Smith
5	Smith
1	Zilch

Indexing is so simple — once it's done, it's done — that some people, I think, try to make more of it than there is.

Notice that a by-product of indexing is that identically spelled data appear together in groups — like our Smiths, above. This will be of help to us when we wish to **.FIND** certain data and **.LIST WHILE** that data is grouped in the file.

Only Character, Numeric and Date type fields are available for indexing. A simple index, one involving only one key field, is quite straightforward. We've already done a simple Character field index. Here are the numeric and data types:

.INDEX ON number TO number
.LIST number

Record #	number
1	0
4	1
3	50
5	50
2	99

.INDEX ON date1 TO date
.LIST date

Record #	date1
1	01/01/01
5	12/31/84
4	01/01/85
3	01/31/85
2	12/31/99

COMPOUND INDEXING

A Compound Index, one involving two or more key fields joined by a + sign, is trickier. A compound index means that if identical data are found in the *first* of the two named key fields, for any two or more records, then those records will be re-ordered on the basis of data found in the *second* of the two named key fields. The syntax is:

INDEX ON field1 + field2 TO indexfilename

But a compound index involving two different field types will return a *dBase III* error message:

```
.INDEX ON name+number TO namenumb
Data type mismatch
             ?
INDEX ON name+number TO namenumb
```

dBase does not want to create an index of mixed — unmatched — data types. The rule of thumb here is: for a Compound Index of mixed field types, convert all non-character type data to character type data with the appropriate *dBase* Function.

Functions are short, one-word commands which end in a **( )**. They sometimes call for a word or two inside these parentheses. Functions usually convert data from one form or format to another.

The **STR( )** function will temporarily convert our numeric data to character type data. The **STR( )** function wants to see the numeric field's name inside its parentheses, followed by a comma and then the width of the numeric field in the database.

```
.INDEX ON name+STR (number,2) TO
namenumb
.LIST name, number
```

Record #	name	number
2	Able	99
4	Smith	1
3	Smith	50
5	Smith	50
1	Zilch	0

As you see, the three Smiths have been re-ordered on the basis of the data in the Number field.

THE DATE IN COMPOUND INDICES

The **DTOC( )** function will temporarily convert **D**ate type data **TO C**haracter type data for a compound index. It wishes to see the name of the date type field you wish converted inside its parentheses. But if we

```
.INDEX ON name+DTOC(date1) TO namedate
.LIST name,date1
```

Record #	name	date1
2	Able	12/31/99
4	Smith	01/01/85
3	Smith	01/31/85
5	Smith	12/31/84
1	Zilch	01/01/01

we will see that *dBase* has interpreted the character date from left to right in its date re-ordering; within the Smiths, it put 12/31/84 after 01/31/85. This could not be right. There are at least two ways of dealing with this situation.

THE SUBSTR( ) SOLUTION

First, we can force *dBase* to read and index the date data in significant order — first the year, then the month and day — by stringing these two sections or substrings of **DATE1** together, with the **SUBSTR( )** function. Inside its parentheses, the **SUBSTR( )** function wishes to see the name of the item you are trying to string out — in this case **DTOC(date1)** — a comma, the starting position in the field of the substring you wish to consider, another comma, and finally the width in spaces of that substring. The **SUBSTR( )** formula we are using below would make *dBase* read and interpret the character date 01/15/85 as 8501/15. Try to understand this by looking at this command carefully:

```
.INDEX ON name+SUBSTR(DTOC(date1),7,2);
+SUBSTR(DTOC(date1),1,5) TO namedate
.LIST name,date1
```

Record #	name	date
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
3	Smith	01/31/85
1	Zilch	01/01/01

You'll notice that the three Smiths have been re-ordered on the basis of their **DATE1** data.

THE .SET DATE ANSI SOLUTION

Or, secondly, we can take advantage of *dBase III* Version 1.1's **.SET DATE** commands to have all date data treated as being in the ANSI date format — yy.mm.dd — which is the perfect order for date indexing. Let's try this with an index of 3 mixed field types:

```
.SET DATE ANSI
.INDEX ON NAME+STR(NUMBER,2)+
    DTOC(DATE1) TO
NAMNODAT
.SET DATE AMERICAN
.LIST
```

Record #	NAME	NUMBER	DATE1
2	Able	99	12/31/99
4	Smith	1	01/01/85
5	Smith	50	12/31/84
3	Smith	50	01/31/85
1	Zilch	0	01/01/01

The two Smiths with identical **NUMBER** data have been re-ordered on the basis of **DATE1** data.

Each of these methods has its place. You should experiment and become comfortable with both.

MAINTAINING INDICES

Now that we have all these indices floating around, ready to serve us, we must remember to maintain them. To maintain an index is to keep it updated to changes made in the key field data of the database. To do this, we should have all our indices "attached" to the database before we **.APPEND, .DELETE** and **.PACK,** or **.EDIT** the database.

There are two ways to attach all the indices to the database. The lazy man's way is with one long sentence:

```
.USE example INDEX name, number,;
date,namenumb,namedate
```

The other way of attaching indices takes two sentences:

```
.USE example
.SET INDEX TO name,number,date,;
namenumb,namedate
```

Now you may **.APPEND, .DELETE** and **PACK,** or **.EDIT,** knowing that each attached index file will be kept up to date.

THE .REINDEX COMMAND

Having a number of indices attached when you do an **.APPEND** does slow down the append process; there is something to be said for **.USE**-ing a file without any indices attached when you **.APPEND.** When you are done appending, you should attach the index file that interests you with the **.SET INDEX TO,** and follow this with a **.REINDEX.** The **.REINDEX** command uses all the records in the database to re-compute or update the attached index file or files. For example:

```
.USE example
.APPEND
Record No.      6
NAME        Smith
NUMBER      50
DATE1       01/15/85
```

When you arrive at Record No. 7, save your work by hitting the <**RETURN**> key and then,

```
.SET INDEX TO namedate
.LIST name,date1
```

Record #	NAME	DATE1
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
3	Smith	01/31/85
1	Zilch	01/01/01

Notice that the index file is "unaware" of our 6th record because it was not attached when we did the **.APPEND.**

```
.REINDEX
.LIST name,date1
```

Record #	NAME	DATE1
2	Able	12/31/99
5	Smith	12/31/84
4	Smith	01/01/85
6	Smith	01/15/85
3	Smith	01/31/85
1	Zilch	01/01/01

Now the **NAMNUMDA.NDX** knows about the new Record #6, and has placed it correctly within the Smiths.

We can update the rest of the our indices with a:

```
.SET INDEX TO NAME,NUMBER,DATE,
    NAMENUMB
.REINDEX
```

The index file we created after we had **.SET DATE ANSI** must be reindexed separately·

```
.SET INDEX TO namnodat
.SET DATE ANSI
.REINDEX
.SET DATE AMERICAN
```

INDEXED FILE USAGE

An indexed database allows you to use the **.FIND** and **.SEEK** commands to locate specific data in the database. There is no faster way of finding specific data than the **.FIND** and **.SEEK** commands.

Once you have found the first occurrence of some specific data, you may use the **.DISPLAY *WHILE*** or **REPORT FORM... *WHILE*** commands to output that data. There is no faster way of outputting data than with a valid, so-called **WHILE** condition. For example:

```
.USE example INDEX namedate
.FIND Smith
.LIST name,date1 WHILE name = "Smith"
```

Record #	NAME	DATE1
5	Smith	12/31/84
4	Smith	01/01/85
6	Smith	01/15/85
3	Smith	01/31/85

To **.USE** an indexed file, **.FIND** some desired data, and **.LIST WHILE** or **.REPORT...WHILE** that data is in the file, is the fastest way of outputting such information. It is the key to fast data retrieval at the dot prompt or in programs, and we'll look into it in a future column. □

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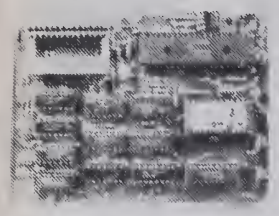

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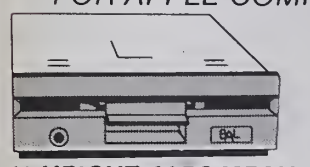

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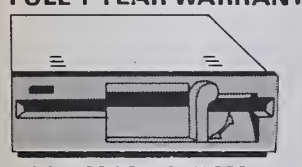

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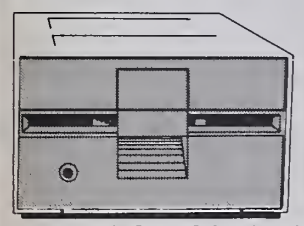

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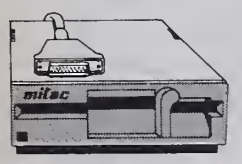

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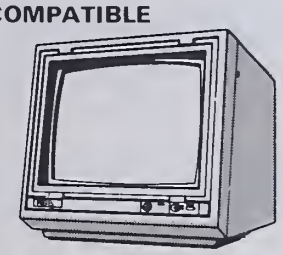

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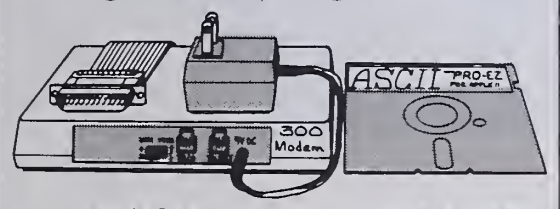

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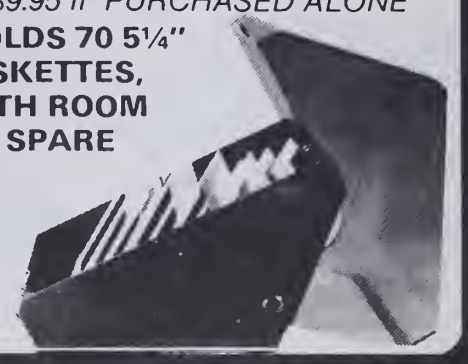

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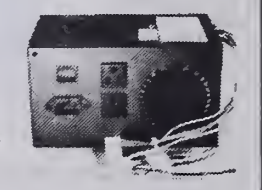

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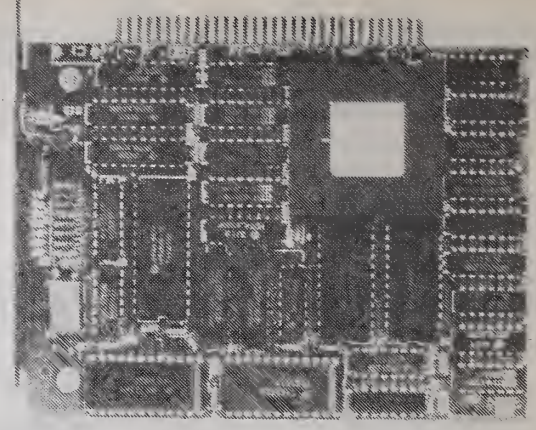

Intelligent Technologies has some new products for micro-to-mainframe communication. The Coax Exchange II communications system includes an add-in board with software for the IBM PC, XT, AT and compatibles; it allows full 3278/9 emulation and links directly to an IBM 3274 or 3276 cluster controller via coaxial cable. Coax Exchange II also provides an interface compatible with the IRMA Decision Support Interface, to allow use of various micro-to-mainframe software and easy integration with existing PC-based networks.

The Coax Exchange Plus software system enhances the use of Coax Exchange II with the ability to handle ten screen profiles and access one host session, on PC-DOS session and two electronic notepads concurrently. Contact J. Bunker and Associates, P.O. Box 28, Mt. Eden, CA 94557, (415) 889-9000.

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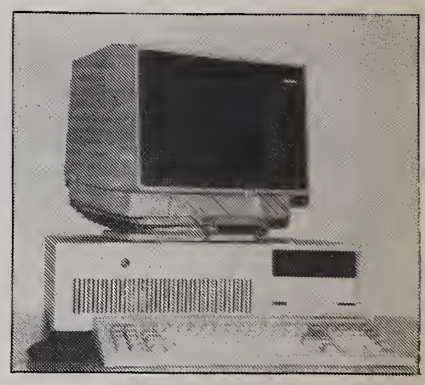

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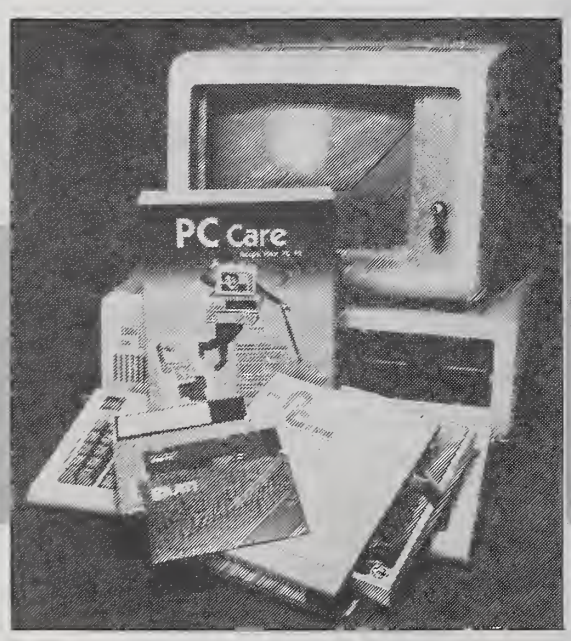

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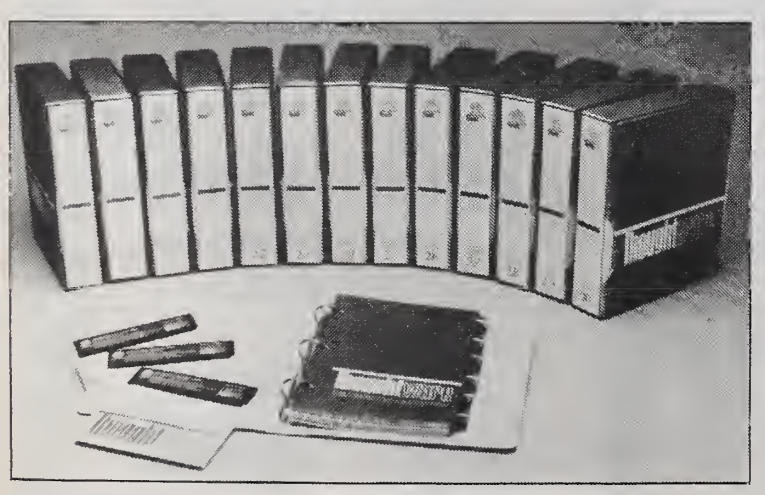
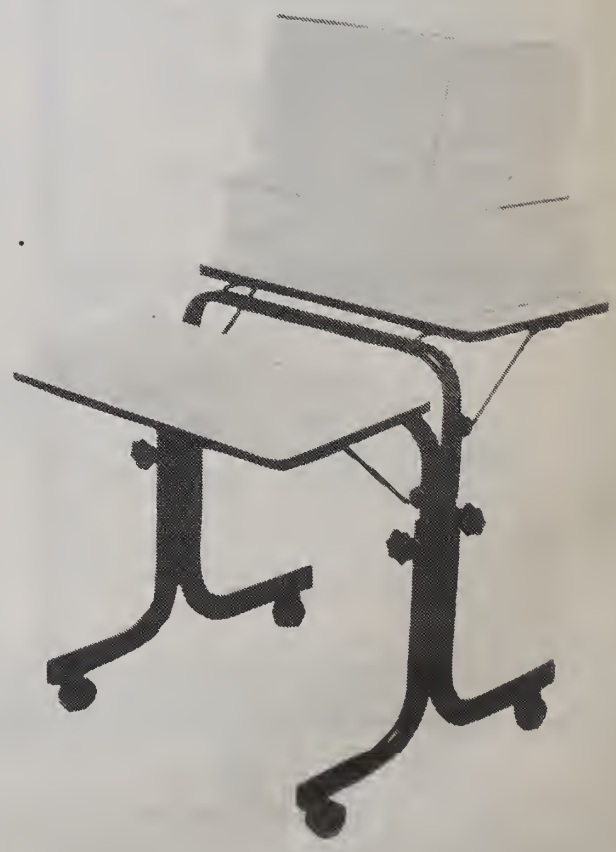


Computer-Based Management Training

Thoughtware Inc., which markets such business training packages as *Sell! Sell! Sell!* and *Management Advantage*, introduces a thirteen-program Management Training Library. The Library is an integrated, interactive package for the IBM PC, XT, AT and compatibles with at least 128K. Both a Management Diagnostic Series and a Management Training Series are included. Thoughtware can be reached by phone at (305) 854-2318, or by mail at 2699 South Bayshore Drive, Suite 1000A, Coconut Grove, FL 33133.



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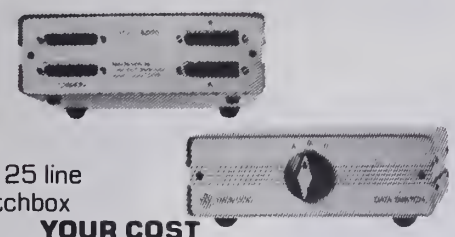

AB25-3
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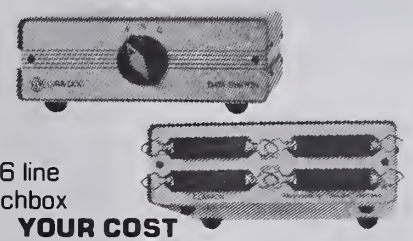

AB36-3
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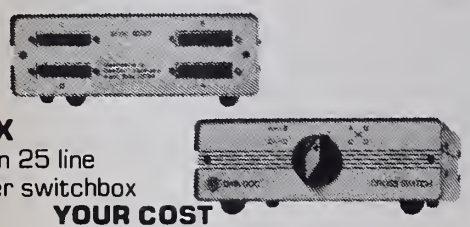

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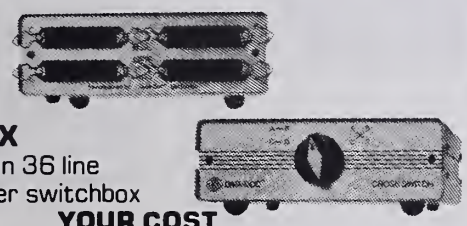

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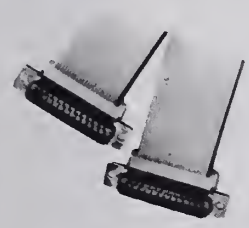

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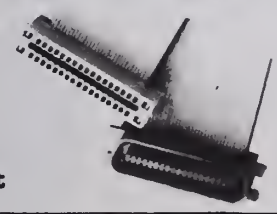

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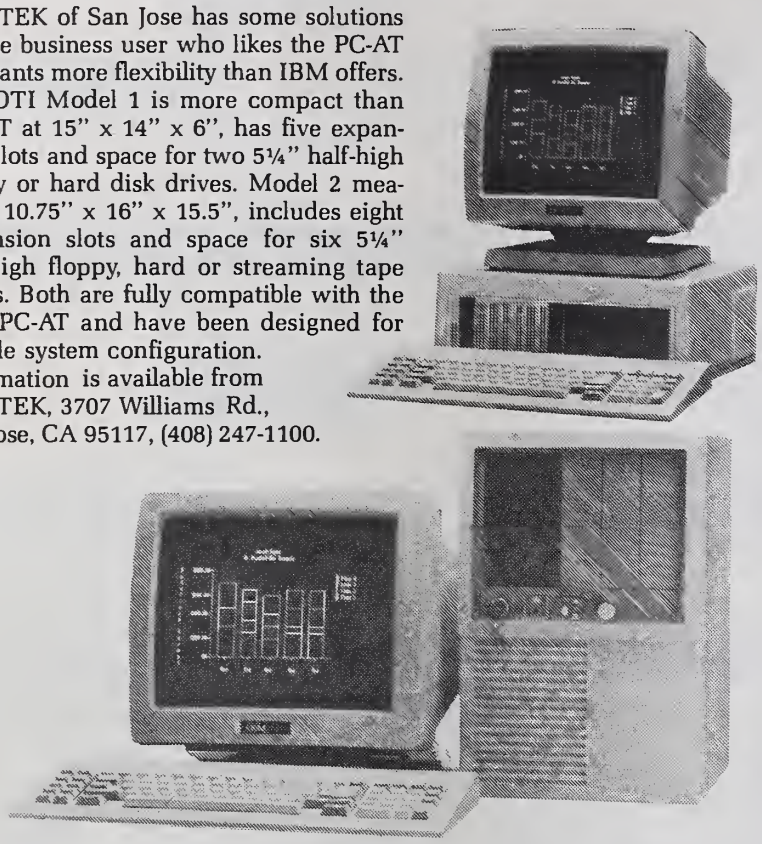
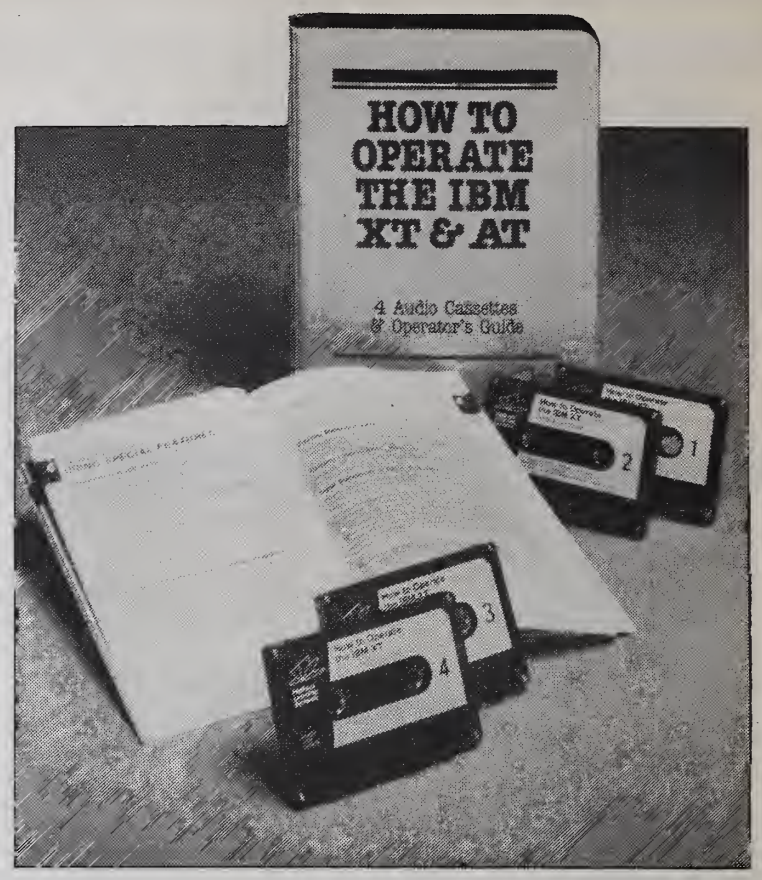
Flexible AT Compatibility

OEMTEK of San Jose has some solutions for the business user who likes the PC-AT but wants more flexibility than IBM offers. The OTI Model 1 is more compact than the AT at 15" x 14" x 6", has five expansion slots and space for two 5¼" half-high floppy or hard disk drives. Model 2 measures 10.75" x 16" x 15.5", includes eight expansion slots and space for six 5¼" half-high floppy, hard or streaming tape drives. Both are fully compatible with the IBM PC-AT and have been designed for flexible system configuration. Information is available from OEMTEK, 3707 Williams Rd., San Jose, CA 95117, (408) 247-1100.





Help For The XT-AT Neophyte

FlipTrack's *How To Operate The IBM XT & AT* is a step-by-step tutorial for fledgling users. The course includes four audio cassettes and an Operator's Guide, and leads the learner from basic start-up procedures to such intricacies as tree-structured directories and setting up batch-processing files. The list price of the course is $89; it's available from FlipTrack Learning Systems, 999 Main St., Glen Ellyn, IL 60137, (800) 222-FLIP.

Make Your PC A Telex Terminal

CompuTelex software from Micro Computer Trends allows the user to access telex lines using just an IBM-compatible PC and a modem. Features include a message editor, single-key sending and receiving of telex messages, automatic logging of telex communications by date and time, on-line Help, and a directory for storing telex numbers. The program sells for $149 and is available from Micro Computer Trends, 8421 Wilshire Blvd., Suite 202, Beverly Hills, CA 90211, (213) 653-4331.

New Business Machine From Panasonic

The new all-in-one Exec. Partner is an all-in-one business computer that features IBM compatibility, two built-in DSDD 360K floppy drives, an 8087-2 math coprocessor socket, serial and parallel ports, an IBM XT-sized 62-pin expansion slot, and a real-time clock powered by lithium batteries. The Exec. Partner is designed for easy transportability, measuring 21.25" x 16" x 5"; it has a hi-res plasma display screen and a built-in correspondence-quality printer with two print modes. Suggested retail is $2595. For information contact Panasonic Industrial Company, One Panasonic Way, Secaucus, NJ 07094.

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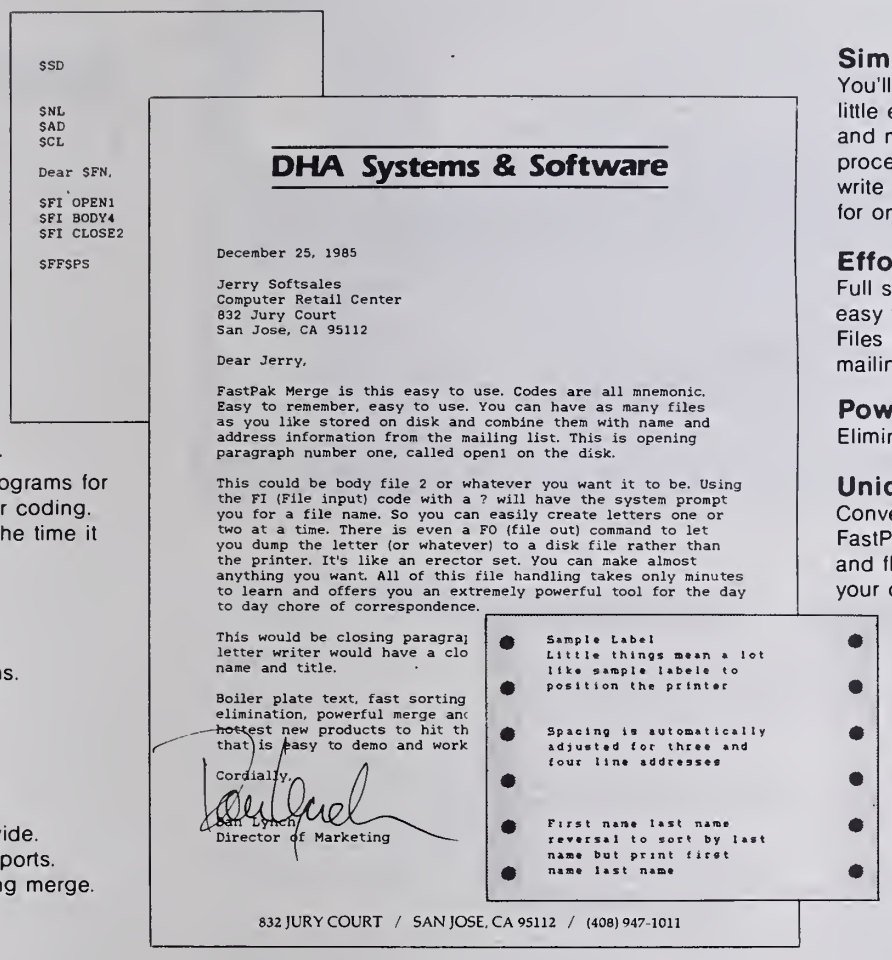
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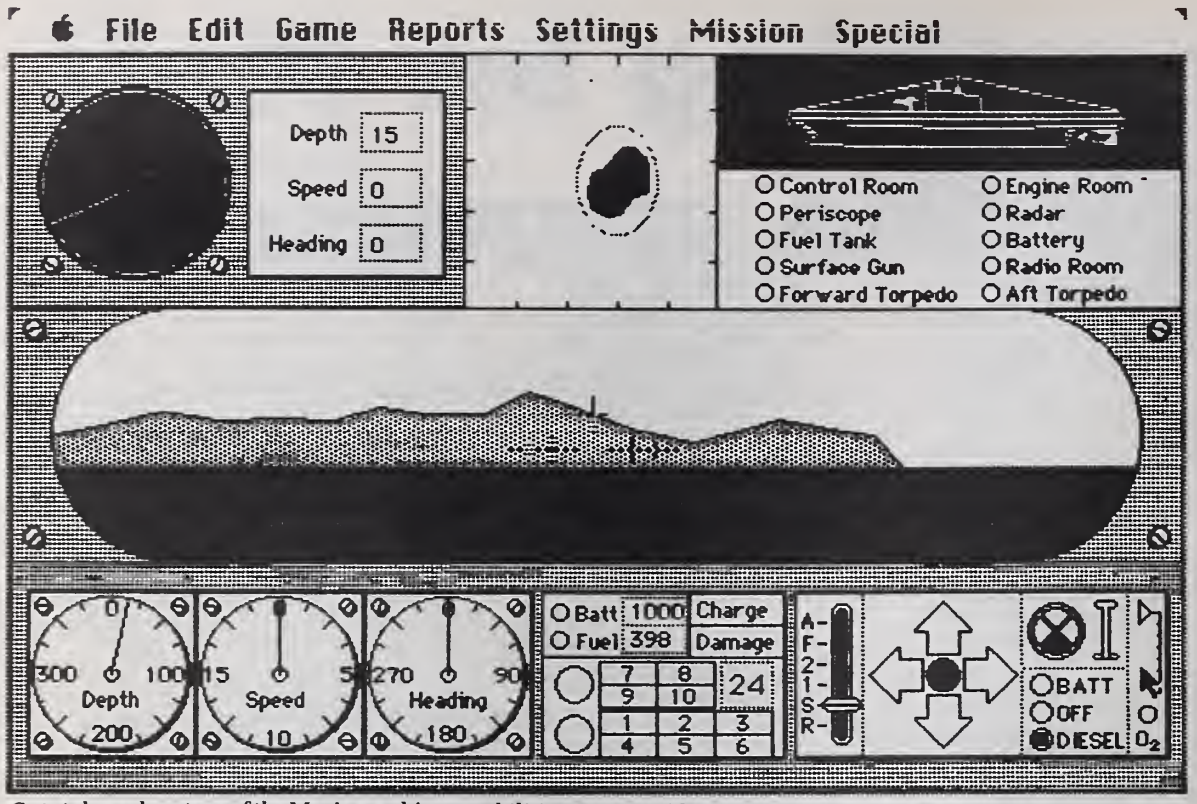

Gato takes advantage of the Mac's graphics capabilities as you guide your WWII submarine through hazardous missions.

GAME SOFTWARE

Gato

Published by: Spectrum *HoloByte Inc.*
For: *Macintosh*
Suggested retail: $49.95
Reviewed by: *Bill Reefer*

Gato is a WWII submarine simulation game produced by Spectrum HoloByte. You may be familiar with this game, which originally appeared for the IBM PC and then the Apple II. But now *Gato* is available for the Macintosh. In fact, the *Softsel* HOTLIST reports that *Gato* has replaced Sublogic's *Flight Simulator* as the number-one-selling software program since the release of the Macintosh version on May 29th. The Mac version of *Gato* was written by Sean Hill, James Rhodes, and Bill Scott.

The graphic capabilities of the Macintosh make this game a joy to play. You are the Captain of the USS *Growler*, a Gato class submarine, which performed the bulk of the US Navy's submarine warfare during WWII. The screen displays the ship's radar, instrument readouts, periscope and bridge views, speed, power, depth, heading, and armament. All of these are controlled by the mouse. If you prefer, many of the instruments have simple keyboard controls as well.

The game is played out on an imaginary expanse of the Pacific Ocean that is divided into 20 quadrants. A portion of the screen will alternately show a quadrant map or the entire chart map when you click on it with the mouse. Traces of enemy ships can be seen on both the chart and quadrant maps, depending on the level of difficulty you choose.

All of that is supplemented by the menu commands that provide radar and damage reports, the captain's log and target book, and skill level settings. There are ten levels of difficulty with 30 possible assignments. The game really gets tough, too, when you start to climb up the ladder of difficulty. For instance, at the levels above two you lose the ship traces on the chart map. At level five, you lose the traces even on the quadrant map. At the levels above seven, the Morse code messages are just bleeped out and not even printed. (A Morse code tutorial resides on disk.)

Another great feature of this game allows you to create customized missions and save them to be played over and over again until you get it right. Ten special missions have already been created for you until you get to the point where you might want to create your own. These missions are in addition to the 30 assignments already supplied. You can also save your progress within up to five different games to the disk.

The action happens fast in *Gato*, even on those three-day treks to your target. A special optional speed-up mode is provided to move things along until you and the enemy bump into each other's sonar. Then it gets hairy. Your mission may be to sink a heavily escorted convoy, rescue survivors of a vessel attacked by the enemy, mine a quadrant full of enemy ships—no ho-hum stuff here. Blast your way through, or run silent, run deep. The choice is yours. You and the mouse are in command. It's sink or swim! Oh, be careful, too! The enemy frequently breaks ComSubPac's code and might send you into an ambush. As much realism as possible has been crammed into this game, including the tactics and capabilities of the enemy ships. You'll learn this quickly once you see the zigzagging convoys and circling destroyers.

Your ship is armed to the gills with six torpedo tubes forward and four aft. You can carry up to 24 torpedoes during any given mission, or mix and match torpedoes and mines, according to assignment. Radar reports chart the speed, heading, and distance of enemy ships. This is helpful in lining up your target, particularly on those tough bow shots.

There are many perils at sea, not the least of which is the enemy's fire. The enemy's depth charges can wreak havoc, and their ships like to ram submarines that forget to dive deep enough. But, until you get the hang of navigating the shallow waters, running aground or gouging the sub's outer hull on a coral reef is just as dangerous. Note, too, that you can complete your mission only to find that the captain and good crew perished for lack of a sharp eye on the oxygen indicator and/or the depth gauge. But if you have been successful and can navigate back to your own sub-tender, you can re-fit the *Growler* and take on new supplies for another mission.

Gato works well on a 128K Macintosh. The sound effects are minimal beeps and explosions that are more like static. It will not operate if you try to open it from the Finder. There are some minor bugs in it that have caused the screen to freeze up or plain go dizzy. However, these are only minor annoyances in a game that is otherwise highly recommended.

PERIPHERALS

FootMouse

Manufactured by: *Versatron Corporation*
Suggested retail: *$225*
Reviewed by: *Lion Goodman*

The FootMouse, from Versatron Corporation, is a better MouseTrap for solving the thorny problems created by word processing software (like *WordStar*) and spreadsheets (like *Lotus 1-2-3*) which require the constant use of Control commands to move the cursor or shifting of the NumLock key to use the number keypad for entering numbers.

The FootMouse is extremely easy to install. The device is plugged in between the keyboard cable and the computer. The mouse is a footpad requiring some fancy footwork to move the cursor North, East, West, and South (Up, Down, Left and Right for those of you who are so oriented).

For heavy spreadsheet users who would use the number keypad for data entry were it not for the unfortunate requirement to turn NumLock on and off with each need to use the cursor, the FootMouse is a dream come true. (Shifting out of NumLock can be accomplished with the Shift key as well.) FootMouse overrides the NumLock key, allowing you to move the cursor while entering numbers on the keypad. The longer you hold the FootMouse in position, the quicker the cursor moves in that direction.

For *WordStar* users, or users of other word processing programs where Control-D is used for a move to the right, for example, the FootMouse can relieve the strain on the left hand as it attempts to move fingers in two directions at once, a movement not intended by nature's anatomical design. Or, for cursor key users, the little dance of the right hand over to the cursor keypad and back, requiring diversion of the eyes and periodic mistakes and rekeying, all can be eliminated by the foot's movement of the mouse. This is especially useful for heavy text editing applications, where you want to keep your fingers on the character keys and speed on to the next correction or insertion.

My experience of the device was as advertised. It took about fifteen minutes to master the movement of my foot, and thus the cursor. It worked flawlessly with my integrated software package (*Enable*). My tendency was to roll my foot side to side and heel to toe, but the device is designed to slide, not roll, in the direction you desire. I experienced some tension in my calf and knee, but felt that this was due to a new use of the muscles, and that with practice I could keep my leg relaxed while using the device.

In my review of the device, I asked three other people to try out the FootMouse. All had basic secretarial and data entry tasks to perform, and were experienced word processing and spreadsheet users. One secretary, who used a dictation machine as well, had trouble using the footpad of the dictation playback unit with one foot, and the FootMouse with the other foot. She compared it to play-

PERIPHERALS

ing a large church organ. For her, using *WordStar* and its Control-Character cursor commands was easier than trying to retrain herself for FootMouse use.

Another individual considered the FootMouse "frivolous" and unnecessary for her simple word processing applications. "Just another thing to think about," was her comment. The main point here seems to be the motivation of the user. If you are bothered by the dance of the two hands or the NumLock toggle switch, the FootMouse looks like a great answer to your prayers and curses. If you haven't noticed a problem, the FootMouse probably looks like just another gimmick, or "one more thing to think about." In other words, don't expect someone who is trained to use *WordStar* to be turned on to the FootMouse right away. It does take time to re-train yourself to use your foot instead of your right hand.

The FootMouse is built to last, however, and the company certainly does not consider it to be a gimmick. Built to military specifications, the switches are designed to last at least 5 million uses, and the testing laboratories have put the devices through 10 work years of use with no failures. Beginning shipment in January of 1985, the company claims to have shipped 20,000 so far and is expecting sales in excess of 60,000 units this coming year.

Versatron sells the FootMouse through distributors and dealers, as well as through Value Added Distributors and retail stores. The FootMouse retails for $225, but is available through many discount outlets for as little as $190 or $175. The device is customized to the board level hardware of one's computer. The standard FootMouse will work with the IBM PC or XT, Compaq DeskPro, and ITT Xtra. Any other clones should be specified, as some take a different ROM chip. For Compaq Portable users, the bad news is that since the device plugs in between the keyboard and the computer, unless you have modified your Compaq to a pluggable keyboard, you can't use the FootMouse. Versatron has a system which requires going inside the Compaq, but since this voids any warranty you might have, they have not yet released this model. They are currently talking to their insurance company and lawyers to see if they can get around this sticky problem. One possible solution is their RS-232 model which plugs into a serial port. If you have a serial port available, this may be a good answer.

Other models available are: Heath/Zenith, AT&T 6000, and Tandy 1200. At this time, Apple is testing a compatible FootMouse, but this has not been released yet. Versatron will customize a FootMouse for an additional fee, or for a minimum order will customize the ROM for any system. They also have devices which can be used with CP/M machines. Versatron is also negotiating with a number of companies to bundle the device into certain hardware or software.

Analysis: If you are bothered by the NumLock or Control-Command problem, the FootMouse is a solution to your problem. If you don't have the problem, the FootMouse is the latest in electronic wizardry. (If it's not broken, don't fix it.) For those of us who must have the latest in electronic wizardry, however, as well as those who do have the need, the FootMouse does its job easily and flawlessly, and will make all your cursor movements smooth ones. (Versatron Corporation, 103 Plaza St., Healdsburg, CA 95448. (707) 433-8244. In CA: (800) 435-1550. Outside CA: (800) 443-1550.)

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USER GROUP NOTES By Mary Eisenhart

The call goes out this month from **Axel Olmos** of Oakland: "Did you just buy that **Atari 520ST** and find out that you were one of the first 100 or so in the Bay Area to buy one? Did you think it would be a long time before you ran into another 520ST user? Not sure how to use it? Don't know where to go for help?"

Well, if that's what's troubling you, friends, call Axel at (415) 658-3159. He's starting up **COAST (California-Oakland Atari ST's)**, and he's offering a free one-year membership to the first twenty ST users who call him. COAST will feature SIGs, newsletters, software, guest speakers, a Help Hotline, parties, swaps, etc. Also in the works is a bulletin board for ST users.

In addition to many other projects, **Lee Felsenstein** is in the process of bringing together a **Mac Hackers Conference**, which may be of interest not only to the more technically-oriented Macintosh users, but also to Amiga and Atari ST aficionados. As Felsenstein explains on **The WELL**, the conference's purpose is "to provide a forum for the free exchange of information regarding opening the architecture of the class of computers known as Macs." He continues, "This includes the Atari ST Jackintosh and all others wherein control information is expressed by means of positional relationships on the screen between visual elements.

"Macs are good. We like Macs. We think they deserve the best support any computer can have — an open architecture and lots of happy hackers ... In America, people hack things. Two guys named Wright hacked the first plane. If The Company won't do it, we'll do it for them, and have fun doing it. Like other things, it's better if you don't do it alone."

Rallied by this clarion call, a distinguished assembly including several out-of-towners in SF for SIGGRAPH gathered at the Exploratorium on July 26. General introductions were made and possible plans discussed, amid occasionally heated debate on various issues (e.g. profit vs. nonprofit, operating system compatibility, to Unix or not to Unix). The planned result of this ongoing collaboration, an open-architecture, powerful, public-domain "Hackintosh" with the ability to support a wide range of customized applications, will grow out of what seems to be some pretty diverse input.

If you'd like some of that input to be yours, or if you feel you have some contribution to make to the cause, you have several options. If you're a Bay Area resident on The WELL, check out the Hacker's Conference for the latest developments and add your own questions and comments. (If you'd *like* to be on The WELL, call (415) 332-4335 for information.) Alternatively, you can attend the next meeting of the **Homebrew Computer Club**, which is being held at 8 pm, August 21 at Turing Auditorium, Jordan Quad on the Stanford campus. (Felsenstein enjoins those who attend not to disturb the class in progress in the auditorium before 8.) If neither option is a possibility for you, send a SASE to Lee Felsenstein at Golemics, Inc., 2600 Tenth St., Berkeley, CA 94710 for a copy of the bulletin and to be added to the mailing list.

More on this next month, and as things happen.

Linda Kahn of the **FORTH Interest Group** calls with a correction for those who were planning to attend FIG's annual convention and banquet in September. The event will still take place at Rickey's Hyatt in Palo Alto, but on September 20 – 21, not 21 – 22 as previously reported. So revise your calendar accordingly.

Leslie Lieurance of the **Screaming Eagles User Group** of San Francisco reports that the group is instituting a distribution of a public domain disk to new members. Consequently, dues are changing: fees are now $10/yr. for individual members, $20/yr. for businesses. The Screaming Eagles are a group for 8-bit CP/M Eagle machine users, and more information is available from Leslie at (415) 661-4362.

If you're an **IBM PC** or compatible user in the general neighborhood of UCLA, **Anne Sylvester** of Santa Monica reports that there's a group just for you. The **UCLA PC Users Group** meets on 2nd Tuesdays at the NPI Auditorium, Westwood Plaza, Level C on the UCLA Campus. Meetings are at 7 pm, and the group offers a public domain library, SIGs, and a newsletter. For more information, contact Anne at (213) 451-5390.

Chris Schram of the **TI-COMM BBS** in San Jose says, for those of you that have been trying in vain to get through, that the board is currently in the process of having its location, phone number and sysop changed, and that consequently the board will be down for at least a month. So stay tuned for the updated, new, spiffy TI-COMM BBS, which will be back with us as soon as all the changes are made.

Nancy J. Hildebrand of **PATCA** (Professional & Technical Consultants Association) sends along some materials from her organization. PATCA is a nonprofit organization comprised of a diverse assortment of consultants, both the self-employed and those employed by small firms. It periodically conducts seminars and meetings to keep members informed of industry developments. For those seeking the services of a consultant, PATCA publishes a directory of consultants (indexed both alphabetically and by specialty) and offers a no-fee referral service. If you're a consultant looking for others of your profession to pool resources with, or if you're suddenly finding that you need a consultant, call PATCA at (408) 287-8703.

On the subject of professional organizations, software developers might want to check out the **Software Entrepreneurs Forum**, a Silicon Valley organization which seeks, according to founder Mike Boss, "to create a contemporary agora for the software industry, a stimulating environment which recognizes the need for the promotion of innovative concepts in the midst of, not apart from, the hustle and bustle of the marketplace." SEF has numerous SIGs on topics from Marketing to Macintosh, along with frequent general meetings, speakers and useful presentations. The SEF is a nonprofit organization which has grown since 1983 from about a dozen members to over 200, with a wide range of interests and specialties. Information on SEF is available by writing P.O. Box 61031, Palo Alto, CA 94306, or call (415) 854-7219.

Neil Zachary of the **IBM Users' Group** reports that his organization is now not just national, it's international. In conjunction with ITT/Dialcon Inc., the group is inaugurating a worldwide network link, featuring a bulletin board, SIGs, a catalog of the group's public domain library, and a forum for manufacturers, publishers, and other purveyors of computer-related merchandise to connect with interested user groups. The network link is also intended to facilitate the organization of local chapters of the group. Dues for the IBM Users' Group are $25 per year for individuals; corporate rates are available.

To get the electronic network to a good start, the group and ITT/Dialcon will be giving a demonstration of the system on August 21 at the Sheraton Town House, 2961 Wilshire Blvd., Los Angeles. Neil invites all interested users of IBM and compatible equipment to come and learn how to use the system (the session will be videotaped as a learning aid to user groups who miss the meeting and decide later that they'd like to be on the network). Individuals interested in attending the session should call (800) 435-7347 for more information. Those interested in joining or affiliating their group with the IBM Users' Group can write to 4111 Lincoln Blvd., Suite 100, Marina Del Rey, CA 90292.

August 17	Computer Swap, San Mateo County Fairgrounds, Fiesta Exhibit Hall, 2495 S. Delaware, San Mateo. (408) 266-6768, (408) 978-SWAP for info.
August 26 – 29	INTECH (Integrated Information Technology Conference and Expo), Moscone Center, San Francisco. (800) 638-8510.
September 5	Information session for UC Extension Computer classes, 55 Laguna St., SF, 5:30 – 7:30 pm. (415) 642-3112.
September 5 – 7	Personal Computer Faire, Brooks Hall/Civic Auditorium, SF. (617) 965-8350.
September 9 – 10	Seminar, "How To Write User Documentation," SF State U., Center for Professional Development. Call (415) 469-2509 for information.
September 11 – 12	(Silicon Valley); September 14 – 15 (San Francisco) Self-awareness/relaxation workshop with computer consultant/meditation instructor Ben Spector. Free. San Jose (408) 996-8036. San Francisco session at A.P. Giannini Auditorium, Bank of America Center, 555 California St., SF. (415) 661-9152, preregistration required.
September 28 – 29	Golden Gate Computer Expo, Oakland Coliseum, 10 am – 5 pm. (415) 459-1998.
October 5	Computer Swap, LA County Fairgrounds, Pomona. (408) 266-6768, (408) 978-SWAP for info.

The **East Bay FOG** will be having a booth at the **West Coast Personal Computer Faire**, September 5 – 7 at Brooks Hall in San Francisco. The FOGers need some volunteers to help in their booth, so if you're an **Osborne** user with some spare time call Irv Kavanaugh at (415) 522-9118. East Bay FOG is also planning a swap meet for its September meeting.

MicroTimes will also have a booth, both at Intech and the PC Faire. So if you're in town for the show, be sure to drop by and say hello. And even if you're not, keep your cards and letters coming in. And note our new Calendar of Events — if you're having an event you'd like on it, send us a notice (preferably about six weeks early, to avoid having your September 15 event listed in the October 12 issue) and we'll do our best to get it in there. Here's your chance to publicize your group's Kludge Of The Year Contest, the Exhibit of Useless But Neat Software, the Flight Simulator Marathon, and other exotica. Send useful and/or informative communiques to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609. □

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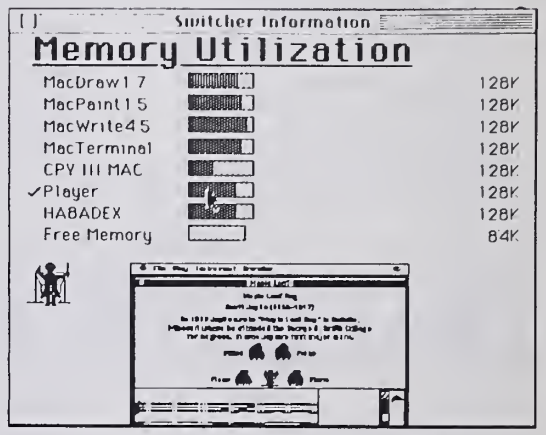

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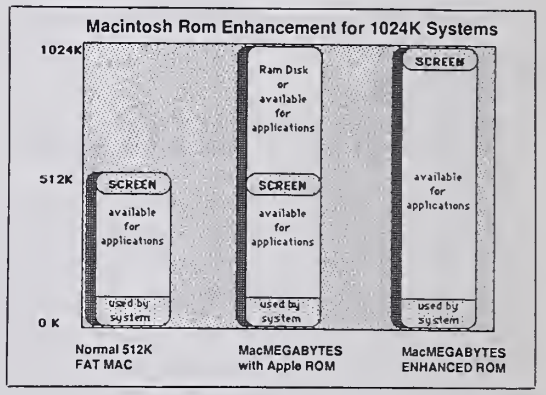

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Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

NCR BBS of Northern California Bulletin Board System for all users of NCR Microcomputers (Decision Mate V and PC-4). Learn more about NCR's microcomputers.

TI-Comm BBS 8:30 pm to 6:00 am, 7 days a week. 300 baud. Multiple message bases, features, and ELIZA. (408) 926-4413.

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BAKUP (Bay Area Kaypro Users and Programmers) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SIMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

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BULLETIN BOARDS

NORTHERN CALIF.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

The Agency BBS. 300 baud. Free. All systems welcome. 16 message bases large data base of over 100 files on various subjects. Special areas for special interests such as gaming, business programs, and MIDI (Musical Instrument Digital Interface). 24 hours. (818) 794-5001.

SOUTHERN CALIF.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

BULLETIN BOARDS

SOUTHERN CALIF.

Lynzie's Motherboard North Hollywood; multi-interest board with public boards, entertainers exchange, job exchange info. Runs on IBM-PC with 10 mb storage, operates on Martian Software, runs 24 hours a day. (818) 508-6482.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet the third Monday at 7:30 pm at the Nuclear Information Center, 1431 Ocean Ave., Suite B, Santa Monica. Phone (213) 747-3219 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

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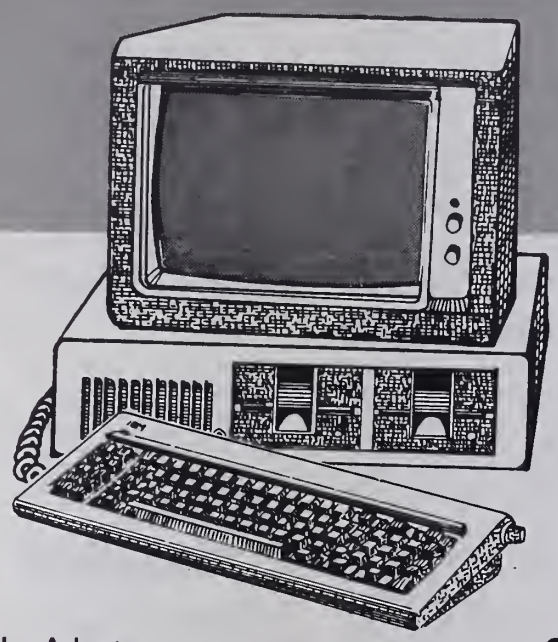

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MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II+, Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

USER GROUPS

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALTOS

Altos User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30. No dues, new members welcome.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are *no* meetings, so call Marie Kaden for information: (818) 846-6682.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and BBS privileges for members. Dues $24.00/yr., $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 123, Huntington Beach, CA 92647, 4th Sunday of each month, 1-5 pm. BBS: (714) 731-6523.

West LA Atari Users Group. Come join fellow Atarians! Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE) meets 2nd Mon./mo. at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. Contact Bob Keimach, (818) 368-6243.

COMMODORE

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

Hollywood User Group (HUG) for Commodore 64. Meets at the Hollywood Equitable Bldg., 6253 Hollywood Blvd., Room 1219, Hollywood, CA (corner of Hollywood/Vine), at 12 noon. For further info write HUG, P.O. Box 38313, Hollywood, CA 90038; or call (213) 483-8973 (voice) or the HUG 1 BBS (213) 874-8253 24 hours a day.

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA 92680, fourth Sunday of the month, 11 am. Contact Tony Soto, P.O. Box 1497, Costa Mesa, CA 92628, (714) 953-0598.

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group. We meet the fourth Tuesday of every month at Sparr Heights Community Bldg., 3311 Downing St., Glendale, CA, 7:30-9:30 pm. All are invited, speakers, questions, products, public domain disks, etc. Contact Gerald Jamriska, 2960 Hawkridge, La Crescenta, CA 91214, (818) 248-7133 for more info.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

San Fernando Valley Epson User Group. TUG-NET SIG, monthly newsletter, BBS, group purchase, public software, classes. Meetings at Western Federal Savings, 14600 Roscoe, Van Nuys, 3rd Wednesday, 7 pm. Contact Tom Keyser, P.O. Box 1524, Reseda 91335, (818) 705-6300.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

HEWLETT-PACKARD

Club of Hewlett-Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 519-9365.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Monday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith (818) 994-6567.

UCLA PC Users Group. IBM/PC or compatible owners welcome to join us on 2nd Tuesday, 7 pm. Public domain library, SIGs, and newsletter. NPI Auditorium, UCLA, Westwood Plaza, Level C. Contact Anne Sylvester, 601 Ninth St., Santa Monica, CA 90402, (213) 451-5390.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Los Angeles Macintosh Group (LAMB) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

MAC-Hollywood (Hollywood Macintosh SIG) meets once monthly on varying weeknights at 7:30 pm. Contact Ron Bastone, (213) 462-2860. Meetings at 1756 N, Garfield Pl., Hollywood, CA.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

OSBORNE

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group. Anyone interested in CP/M computer systems is welcome. Free admission. Speakers, questions and answers. Join our group for $10.00 yr. and copy public domain software from library. Meetings at 20630 Lassen St., Chatsworth, 2nd Friday of the month, 7:00 pm. Contact Alicia Fahey, P.O. Box 424, Northridge, CA 91328, or call (818) 709-6202 for more info.

Osborne National Users Group meets 2nd Frl./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

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Selecting A Business Computer

By L.K. Engelhart

For many business people, the question of choosing a computer seems like buying any other piece of business equipment, but they admit that in some respects it is very different. Computers used in business cannot be considered simple appliances. Unlike other business tools, they are adaptable to so many needs that understanding a computer's role in a given business depends on first addressing those needs. Once needs are clearly established and the uses for the computer decided, a computer can be selected like any other piece of equipment.

Business owners often express reasonable doubts concerning the usefulness of computer equipment to their operations. However reasonable these doubts may be, I believe that businesses with information-related problems will benefit from using computers. I also believe it is essential to understand the needs and decide how they are going to be met *before* spending any money on computers.

People ask, "What kind of computer should I buy?" My response is pretty consistent, "Pick a computer the same way you would pick an automobile." In saying that, I'm exercising some professional license. The analogy is, of course, not perfect. Let's take a real look at what's entailed in selecting a car and see what the similarities and differences are. Most people have bought a car or two and, recalling that process, they are a little uncomfortable with my analogy. They know what a car can do, and when they buy one, there is a clear and well-established need.

Buying a computer is just not the same, particularly for a business. Most businesses can ill afford an investment or monthly payment that does not contribute to the profitability of the enterprise. When a business buys a vehicle, it is usually pretty easy to tell how much more money can be made as a result. In some cases you might not even be able to do business without it. In comparison, we know we can operate a business successfully without a computer. So we have to ask *why* our business would want one.

When we ask why in the case of the computer, we distinguish that decision from the much less complicated one of picking the car we want. What's the difference? We know computers are useful for many different things. In fact, computers can do so many things that buying one makes no sense unless we have defined what we intend to use it for. With most tools, we look at the problem from the perspective of the tool. With computers we look at the tool from the perspective of the problem.

Many people are repelled by the notion that computers are like the human brain. Although there is little support for this notion, there is one respect in which a computer is much like a brain. Both are powerful by virtue of being general-purpose mechanisms able to solve any kind of a problem. However, because the computer must be programmed to do this, it can never be more than an assistant to the human brain. It happens to be the most capable assistant we have, but we are very much dependent on many other people to make it work.

It's really no mystery what a computer does. It's really not much different from a lawn mower. We know the lawn has to be cut. Logically this means cutting each blade of grass to a uniform length. We think that slicing the grass is better than tearing it and we would like to slice a whole bunch of blades at a time. It's logical. So we design ourselves a contraption that satisfies this logical requirement in the most economical way, considering the available technology. Computers are simply contraptions designed to do logical things with information.

Information is something that people use quite naturally. We hardly ever wonder at the complexity of the systems we have created to deal with it — education and journalism, for example. Computers, however, provide a tool for using information which has so much potential that all of our information systems are being redesigned to use this new tool. There are economics involved, of course, and until recently only the affluent could afford these sophisticated devices.

You too will have to be affluent if you intend to design and develop your own applications to support a small business. Fortunately, though, many of the most common information needs of businesses have been reduced to logical algorithms which can be accomplished on affordable small computers. There are many versions of accounts receivable, payroll, general ledger, inventory accounting and other traditional business information systems, some of these versions better suited than others for your specific business.

When we decide we will use a computer to do something, we aren't simply fixing something in the current system. Nor are we just switching to a better way of doing what we do right now. When we decide to use a computer we are committing ourselves to an entirely different way of doing things so we can accomplish much more than we ever could have otherwise. It's like buying a lawn mower instead of sending out the goats.

To make such a commitment pay off we must be very clear about what aspects of our operation are do-able with a computer and how we are going to use it in each of those areas. We will certainly want to consider changing some of the things we do and possibly consider doing some things we never did without computers. And we will want to learn enough about the management of this new resource to gain the control we need to depend on it completely, must as we already depend on our car and telephone.

George Morrow, founder and chairman of Morrow, Inc., draws an analogy between the broad expansion in the use of computers and the spread of the written word as a result of the printing press. At the time of Gutenberg, according to George, the major proponent for spreading of the word was the church, and their primary technology for accomplishing it depended on a limited number of highly skilled craftsmen pushing quill pens. Given this well-endowed demand, the printing press represented a major technological breakthrough and spawned a great number of printing press operators, each hoping to capitalize on the exploding market. Unfortunately, according to our scenario, the technology overran the demand. There was apparently a huge, but finite, market for indulgences and bibles. It was some time until the infrastructure existed to support the network of writers, publishers, printers, distributors and retailers.

For those of us who are trying to understand the role of computers in our lives today, this analogy is useful. I believe computers represent the most recent technological breakthrough in use of information, even more important than the printing press. But computer technology has overrun our ability to produce *worthwhile* applications. In terms of the Gutenberg analogy, we do not yet have fully movable type nor standard type fonts. Most of our printers are doing their own writing and many of our writers are required to do their own printing and publishing. Printers are considered authorities on writing and we look to printing press manufacturers and typesetters for advice on what and how to read.

This analogy can give us useful insight on the problems of using computers in business. First, we can see that the computer manufacturer will be no more interested in business applications than the printer will be in manuscripts. Second, who is the equivalent in our context of the author in the Gutenberg analogy? If we are experiencing a serious lag in development of useful applications, it may be because we haven't clearly defined the role of the application designer.

What does all this tell us about selecting a business computer? I'll stick with the comparison to selecting an automobile. There was a time when it became apparent to many people that a car was a necessity. A buyer who resisted buying because of the change in lifestyle or the significant investment involved would have missed a lot and would still be waiting for the latest model.

That comparison dead-ends at the question of how you are going to use a business computer once you've decided to buy. This is where the Gutenberg analogy becomes effective. Look for the answer to this question from a business system designer, not a computer manufacturer or computer programmer. □

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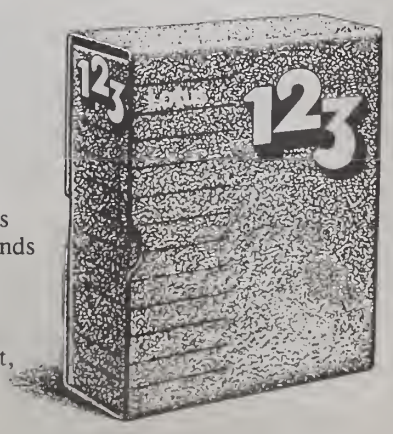

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